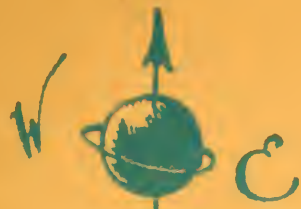
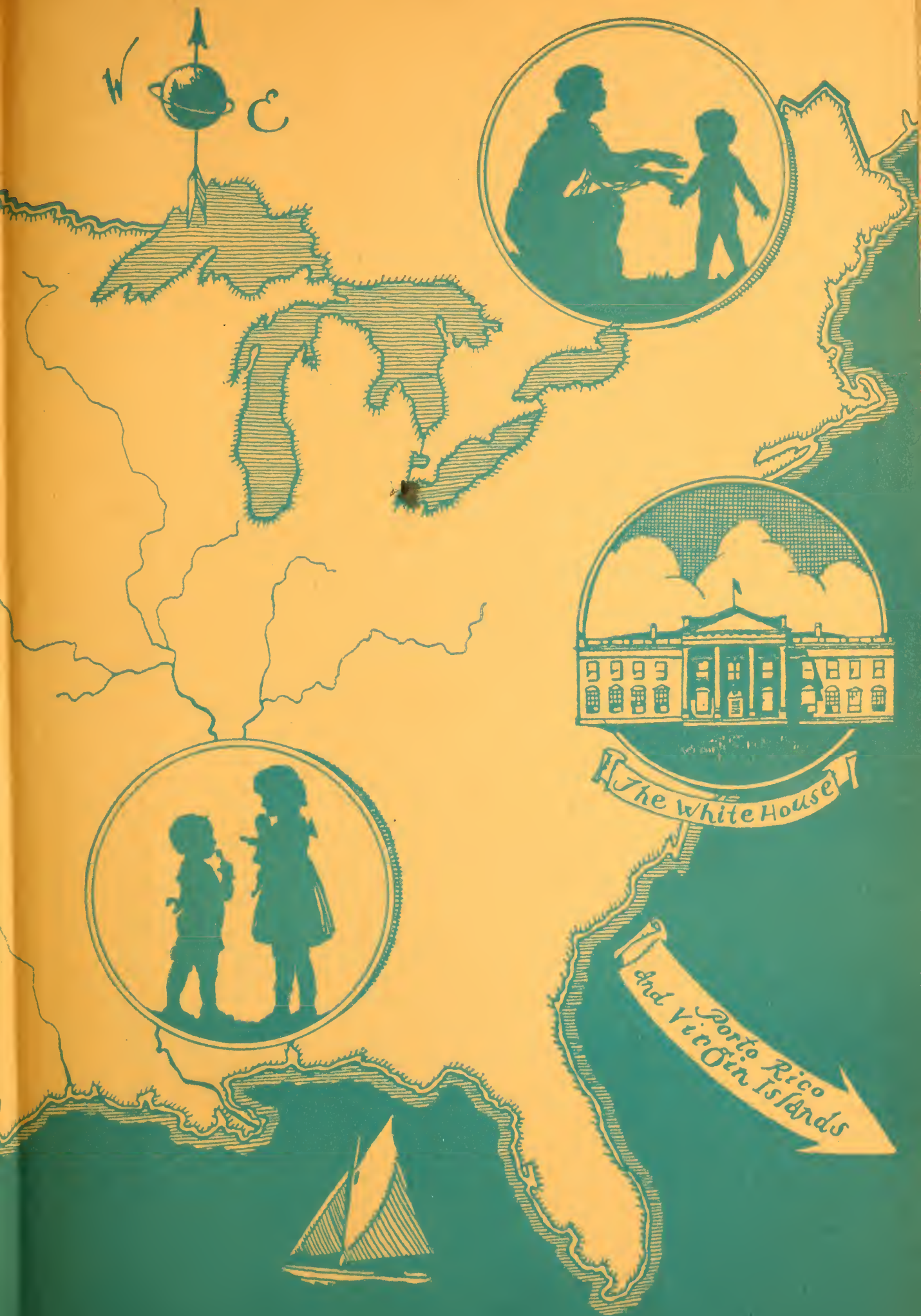




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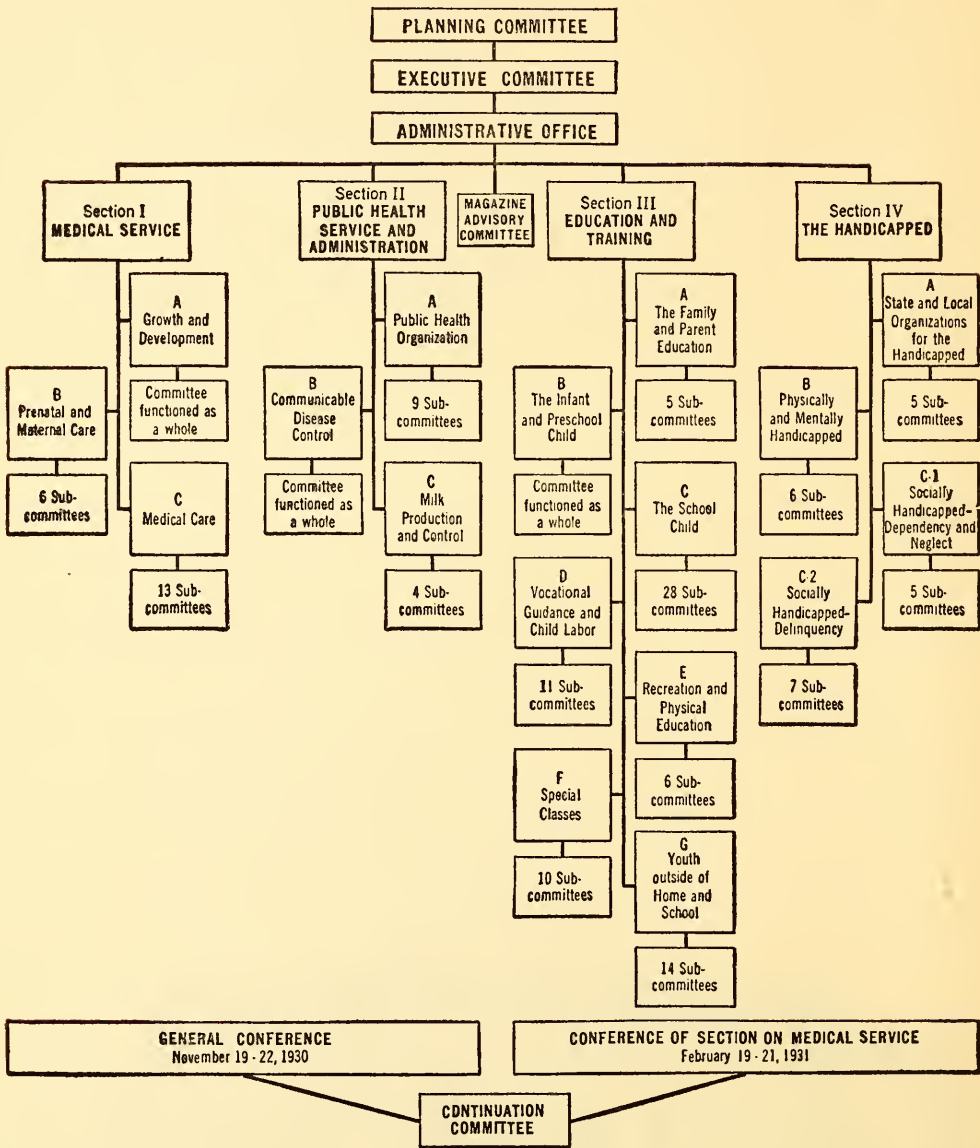


WHITE HOUSE CONFERENCE
ON CHILD HEALTH AND
PROTECTION

Called by
PRESIDENT HOOVER



**WHITE HOUSE CONFERENCE ON CHILD HEALTH
AND PROTECTION**
Called by President Hoover



SECTION IV—THE HANDICAPPED:
PREVENTION, MAINTENANCE, PROTECTION

C. C. CARSTENS, Ph.D., *Chairman*

Committee on

PHYSICALLY AND MENTALLY HANDICAPPED

WILLIAM J. ELLIS, LL.D., *Chairman*



THE HANDICAPPED CHILD

XIII For every child who is blind, deaf, crippled, or otherwise physically handicapped, and for the child who is mentally handicapped, such measures as will early discover and diagnose his handicap, provide care and treatment, and so train him that he may become an asset to society rather than a liability. Expenses of these services should be borne publicly where they cannot be privately met

From THE CHILDREN'S CHARTER

THE HANDICAPPED CHILD

REPORT OF THE COMMITTEE ON
PHYSICALLY AND MENTALLY HANDICAPPED

WILLIAM J. ELLIS, LL.D., *Chairman*

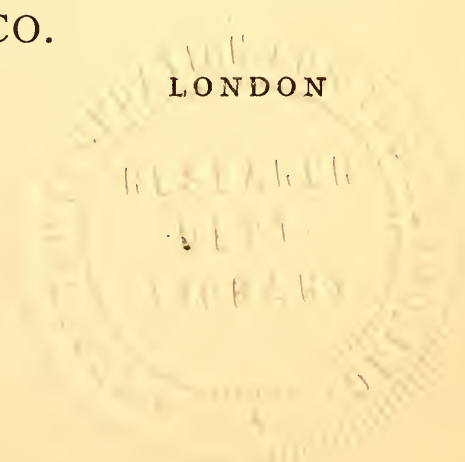
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Dedicated to

THE CHILDREN OF AMERICA

WHOSE FACES ARE TURNED TOWARD THE LIGHT
OF A NEW DAY AND WHO MUST BE PREPARED TO
MEET A GREAT ADVENTURE

SECTION IV

THE HANDICAPPED:
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THE HANDICAPPED CHILD





THE HANDICAPPED CHILD

A SUMMARY

A BILL OF RIGHTS FOR THE HANDICAPPED CHILD

IF we want civilization to march forward it will march not only on the feet of healthy children, but beside them, shoulder to shoulder, must go those others—those children we have called *handicapped*—the lame ones, the blind, the deaf, and those sick in body and mind. All these children are ready to be enlisted in this moving army, ready to make their contribution to human progress; to bring what they have of intelligence, of capacity, of spiritual beauty. American civilization cannot ignore them.

The handicapped child has a right

1. To as vigorous a body as human skill can give him.
2. To an education so adapted to his handicap that he can be economically independent and have the chance for the fullest life of which he is capable.
3. To be brought up and educated by those who understand the nature of the burden he has to bear and who consider it a privilege to help him bear it.
4. To grow up in a world which does not set him apart, which looks at him, not with scorn or pity or ridicule—but which welcomes him, exactly as it welcomes every child, which offers him identical privileges and identical responsibilities.
5. To a life on which his handicap casts no shadow, but which is full day by day with those things which make it worth while, with comradeship, love, work, play, laughter, and tears—a life in which these things bring

continually increasing growth, richness, release of energies, joy in achievement.

SIGNIFICANT FINDINGS

There are more than 10,000,000 children in the United States who are *handicapped*—in the sense in which the term is here used—that is, children who are blind and partially seeing, deaf and hard of hearing, crippled, who are mentally deficient or disordered, who are suffering from tuberculosis, cardiac or parasitic diseases.

Of the total number of handicapped children, it has been estimated that there are in the United States:

- 2,000,000 children with impaired hearing
 - 17,000 of which are deaf
- 65,000 visually handicapped children of which
 - 15,000 are blind, and
 - 50,000 partially seeing
- 300,000 crippled children
- 400,000 tuberculous children and
- 850,000 suspected cases of tuberculosis
- 450,000 children with cardiac limitations
- 2,500,000 children with well marked behavior difficulties including the more serious mental and nervous disorders
- 6,500,000 children who are mentally deficient (as newly defined)
 - 850,000 of whom are definitely feeble-minded and
 - 5,650,000 who are intellectually subnormal
- 150,000 epileptic children

CHALLENGE OF THE HANDICAPPED

These figures indicate that the problem of the physically and mentally handicapped child constitutes a challenge to the Nation. The preparation of the handicapped child for life's work calls for the enlistment of all available resources and for a coordination of the efforts of all agencies working in his behalf.

Although the movement in behalf of these children is already progressing with an acceleration that is encouraging, the results achieved are as yet far from satisfactory. This is due primarily to lack of comprehensive knowledge of the problem and to lack of adequate facilities for diagnosis, treatment, and training.

There are large numbers of physically and mentally handicapped children who are now or will later become social and economic liabilities unless society is aroused to meet its responsibility.

The new and intelligent approach toward a consideration of the problems of the handicapped child is that he is no longer to be regarded as a liability, but rather, as a potential social asset. Therefore, in work with the handicapped, we must develop a wholly constructive attitude—an attitude permeated with effective optimism.

The needs of the physically and of the mentally handicapped child in general are the needs of all children. The handicapped child should be so guided that his aptitudes and abilities may be given the fullest possible development and that his life may become one of usefulness, success, and happiness. He requires, however, more intensive application of medical care and of social, academic and vocational training in order fully to realize his potentialities.

A COMPREHENSIVE PROGRAM

A comprehensive plan to prepare the physically and the mentally handicapped child for life's work must include:

Early discovery and diagnosis which will determine the nature and extent of the handicap while it is in the incipient stages and when the greatest possible benefit may be secured from care and treatment.

Curative and remedial treatment which will enable the handicapped child to function, physically and mentally, as normally as possible, this treatment to be available to all handicapped children regardless of financial

circumstances and to be a continuous process until a proper adjustment has been effected.

Education which will be as broad as is consistent with the mental and physical powers of the child, designed to develop fully the handicapped child's latent abilities.

Vocational adjustment including educational and vocational guidance which will discover the handicapped child's general abilities and aptitudes, interpret his vocational significance, and secure for him that type of general education and vocational training through which his vocational objectives may be achieved.

Protective legislation which will make a comprehensive program for the handicapped fully effective, safeguarding the interests of the handicapped as well as the employer.

Research which will determine the fundamental causes of mental and physical disabilities and discover the most effective methods of prevention and control of all handicaps.

National and central state agencies which will provide for the integration of national, state and local educational, vocational, industrial, health, and welfare activities in a comprehensive plan on behalf of the handicapped child.

THE DEAF AND THE HARD OF HEARING



THE DEAF AND THE HARD OF HEARING

INTRODUCTION

IT is impossible to estimate exactly the number of people in the United States who are deaf, in the strict sense of the term, or who are hard of hearing, because there have been no adequate population surveys on this point. But on the basis of group tests of school children and drafted men, it is estimated that there are ten million people in this country whose hearing is impaired to a degree which interferes seriously with their educational and vocational progress, and with proper social adaptation.

In the case of school children the estimate, even though rough, may be more reliable than that for both adults and children, since over a million school children of and under high school age, in over 130 cities, have been tested for hearing ability by the best rapid measuring devices available.

Allowing for the fact that these surveys are preliminary, and that uniformity of methods and standards has not yet been achieved, and assuming that the groups tested constitute fair samples of the school populations, it is safe to say that approximately three million of our children are suffering from impaired hearing. Included in this total are over seventeen thousand children in institutions for the deaf, whose conditions and needs constitute a special problem.

In the language of experts who deal with problems of hearing, an individual is classed as deaf when the impairment of his hearing is so grave that the sense of hearing is of little or no use. Deaf children, since they do not hear the speech of others, cannot acquire it in the usual way, and must be educated by experts in special institutions—schools for the deaf. They must be taught to read the lips, or else the spoken language of others is not accessible to them.

Individuals who have a practical degree of hearing that is sufficient to permit them to acquire facility in speech are classed as *hard of hearing* or as *deafened*. For practical purposes, hard of hearing children may be designated as those who are capable of receiving their education in ordinary public or private schools, but who need special treatment to compensate for their hearing deficiency. This special treatment will be described later.

The Causes of Deafness

Some individuals are born deaf; others acquire deafness or become hard of hearing in infancy or later in life, as a sequela of scarlet fever or some other infectious disease, or as a result of some disease of the ear. In a great many cases the causes of the progressive loss of hearing are still a mystery. It is not to be assumed, therefore, that the certification of the percentage of defective hearing among children is an adequate index to the percentage among adults. Some have estimated that 50 per cent of adults have suffered an appreciable loss of hearing. Even higher estimates have been made. The most vital part of the problem concerns the deaf child and the hard of hearing child, since the greater the progress, socially, educationally, and vocationally that the individual has made before loss of hearing becomes serious, the less detrimental the effect. A slight, though appreciable, loss is not necessarily a handicap in any case.

The importance of even the lesser degrees of hearing impairment is really great. The hard of hearing are hampered and handicapped in manifold ways. They are at a disadvantage in ordinary conversation; they are precluded from full enjoyment of the theater and motion pictures, except in those houses which have been wired for ear phones; they cannot profit by lectures except in especially favorable seats in the best of auditoriums; many occupations are closed to them, and even in occupations in which the hearing impairment does not really matter, or is perhaps a

positive asset, employers are apt to look upon them with disfavor.

Unless especially favorable conditions exist, the psychologic and social effects of lowered hearing are also grave. Due to the effort to hear, the hard of hearing person is under strain and tension, and hence is subject to unusual fatigue and sometimes nervous irritability. In many cases this feeling of inadequacy produces unfortunate social attitudes, and although the hypacusic * person is apt greatly to misjudge the attitude of normal people, nevertheless these attitudes, ranging from thoughtlessness and superciliousness toward contempt, do actually exist.

The Hard of Hearing Child

The hard of hearing child is in a position vastly more unfortunate than that of the hard of hearing adult. Education of the child is seriously interfered with—sometimes actually prevented; the learning of a vocation is made extraordinarily difficult; the social adaptation which normally comes through contacts and communications with other children and with adults is grievously restricted in all cases, and, for many, is made well-nigh impossible. All of the disadvantages suffered by those who lose their hearing late in life are multiplied and exaggerated for the hypacusic child. The saddest part of the situation is that many children are defective in hearing, and neither their teachers nor their parents are aware of it. These children are regarded as dull—sometimes even as feeble-minded, or as non-cooperative or recalcitrant, while their whole difficulty is due to inability to understand the words which they hear imperfectly.

Can Deafness be Prevented?

Deafness, either total or partial, constitutes a great national problem—educational, economic, social, and personal

* *Hypacusia* is the convenient technical term employed to designate any degree of loss of hearing, and both deaf and hard of hearing persons are said to be hypacusic.

in its scope. From a merely theoretical point of view, the major step in the solution of this problem is the prevention of the condition itself. If we could find and eliminate causes of hypacusia, then we would have no deaf persons, no hard of hearing persons, and our problem would disappear. The campaign for the prevention of deafness must, therefore, be carried on in the most thorough way possible. Unfortunately, however, other phases of the problem remain and will for many years.

The reduction of general infectious diseases such as measles and scarlet fever, through improved public health work, has appreciably reduced the causes of deafness. Medicine, through better care of patients, has reduced the injuries to the child's auditory mechanism resulting from these diseases. Still further reduction in the incidence of these diseases and the damage resulting from them is needed. The discovery and proper treatment of inflammatory ear conditions will still further reduce the causes, and this care must be extended to the whole child population. But the application of all the medical means now available will not eliminate deafness; it will only reduce it. A fundamental program for the prevention of deafness must include: research in physiology and pathology to discover not only the more evasive causes of deterioration of hearing, but the means of eliminating them; determination of the nature and conditions of hereditary deafness; suggestions as to means for its prevention.

This research will be a long process, and even when it ultimately succeeds, there will still be, for many years, millions of deaf and hard of hearing sufferers. A large and urgent part of the program, therefore, is the amelioration of the conditions of the hypacusic individual, especially of the hypacusic child.

Helping Those Afflicted

The question of what can be done to ameliorate the condition of the deaf child is a very complicated one, and one that demands comprehensive research. It involves prob-

lems of the physical care of the child in the schools, in institutions and in the home. It involves problems of his education, both general and vocational. And it involves also problems of social training and adjustment. All of these problems differ from the corresponding problems applying to the normally hearing child. In many instances the most vital point of the situation is that we do not know what to do. We are concerned for the physical care of the hard of hearing child, that his remnant of hearing shall not still further depreciate, but shall be improved. But, except with regard to minor medical points, what care will conserve and improve his hearing is yet undiscovered. We know that the education of the seriously hard of hearing child depends upon the use of lip reading, and work in this field is progressing; but even in this field there is a great deal which can be known only when methods of measuring progress in lip reading are carefully worked out.

Much the same situation obtains with regard to the teaching of speech to the deaf. Children who have been almost completely deprived of hearing from an early age are of course unable to speak until speech is taught by laborious methods. The value of speech to these children has been demonstrated, but much remains to be done before the group as a whole can be taught readily intelligible vocalization. Aside from these special problems, the whole subject of adequate instruction is woefully in need of the development, through research, of more satisfactory methods of teaching children, and also, of better methods of training their teachers.

All Handicapped Children Must Be Discovered

In view of all of these needs, and in view of the enormous number of deaf and hard of hearing children, it may seem strange to say that the primary need is provision for the discovery of deafness; but such is actually the case. The discovery of deafness is no simple matter. In order to provide adequately for the care and training of hypacusic children, we need not only to discover those children with

impaired hearing, we need also to discover the type and the degree of deafness with which they are afflicted, and we need to discover these facts at the earliest possible ages. Children who are slightly deafened need quite different treatment from those who are more seriously affected. Types of deafness differ widely, and those suffering from one type of deafness have different limitations and capabilities than those affected with another type. The later the child's deafness is ascertained, the more ground he has lost educationally and socially, and the more difficult the task of compensating for his misfortune. The early discovery of defective hearing, and especially of the lighter cases, or those in the lighter stages, is especially important, in order that the progress of cases may be studied, and the different causes analytically determined. The study of the inheritance of deafness also requires the early discovery of cases, in order that the congenital cases may be separated from the acquired.

While scientific interest in these problems is not new, during the last few years it has become more thoroughly awakened. The report of the National Research Council, embodying the work of expert scientists and educators over a two year period, marks an important epoch in the work for the deaf and formulates a program of research which, when carried through to completion, will furnish the knowledge which will enable us to cope adequately and comprehensively with the plague of deafness.¹ * This plan is enthusiastically endorsed and ways should be found to carry it out to the full.

DISCOVERY OF THE DEAF AND THE DEAFENED

Methods Employed

There are several methods employed for the discovery of different degrees and types of deafness, all of which are based on the same simple principle; namely, giving a sound

* Superior numbers refer to reference at end of this section.

or a series of sounds, of standardized character, and finding out whether the person under test can or cannot hear the sounds. For rough estimates, which may reveal a serious degree of deafness, the human voice may be used directly, provided the person to be examined is known to be mentally alert and is of age beyond early childhood. In giving this test whispered speech, rather than ordinary vocalization, is used. The examiner pronounces numbers, using only the residual air remaining in his lungs after exhalation. Successful hearing is evidenced by the patient's ability to repeat the numbers thus whispered to him. Persons with normal hearing can hear such whispered numbers correctly at distances from 20 to 200 ft. according to the intensity of the whisper. Children who fail to hear the whispers at a distance beyond one-third of the normal distance are classed as hard of hearing.

The watch test, similar in procedure to the voice test, determines the distance at which the ticking of a watch can be heard. Patients who cannot hear a watch at distances greater than one-third of the distance at which persons of known normal hearing can hear the same watch are classed as hard of hearing.

Watches and human speech vary in their loudness in ways which cannot be checked. To avoid this difficulty, various instruments known as *acoumeters* have been devised which produce a single click or a similar sound always of the same intensity, loudness and character.

Acoumetry and Acoumeters. All of the instruments designed to measure hearing capacity are properly called *acoumeters*, and their use *acoumetry*, which means literally *measurement of hearing*. In recent years, however, a number of different acoumeters have been named *audiometers* by their inventors or makers, and acoumetry carried out by the use of these instruments is frequently called *audiometry*. Of the *audiometers* so named, the best known in America are the Seashore, the McCallie, and the Western Electric—all operating on different principles. Of instruments known simply as *acoumeters* there have

been a great variety, such as those of Politzer, Specht, Michotte, Zoth, Merkante, Titchener and so forth. There are also a number of instruments for acoumetry, which have been given names drawn from the mechanical principles involved in their operation or design. Of all the acoumeters, the Western Electric audiometer alone seems adequate for work with children.

Determinations are made, as in the watch and whisper tests, by finding the distances from the ear at which the patient can hear the sound. For more precise work, other acoumeters have been designed which produce sounds of variable intensity, the distance from the patient's ear remaining always the same. These instruments are given an arbitrary scale of intensities, determined by the nature of the instrument, and the character of the sound also varies with the intensity.

Testing by means of a sound, however, does not tell the whole story of hearing, and sometimes not even the most important part, hence other acoumeters have been devised which produce musical tones.

When used with care in a room so treated acoustically that there is no reflection from the walls, all of these simple instruments and measurements are useful for rough work. A room with heavy carpet and heavily draped walls may serve practical purposes, provided all other sounds are well excluded. In a room with ordinary walls and floors, the tests are not so reliable, since in such surroundings, a child can often hear the sound better at certain distances from the examiner or instrument than he can at certain other lesser distances. If noises from the street or building are admitted, or if the test is crudely given, the unreliability is still greater. In general, these tests are of merely preliminary value for adults and are highly unreliable even for rough work with children.

One of the situations which the psychologist frequently meets is that of the backward child, who, after some of these simple clinical hearing tests, has been passed as normal in hearing and hence hastily judged to be feeble-minded,

but who, on more precise test, turns out to be not feeble-minded but seriously deafened. His mental retardation, caused by his inability to hear clearly what was said to him at home and in school, rapidly disappears when he is put under more favorable auditory conditions.

Modern Instruments. To meet the demands for more reliable means of measurement which may be applied to children, more complex acoumeters have been devised. Chief among these is the instrument known by the trade name of the *Western Electric 4-A Audiometer*. This instrument permits rapid, simultaneous testing of groups of children and grades them into two classes: those who are almost certainly normal in hearing, and those who may or may not be defective in hearing. For the retesting of this second group, the more accurate and slower *Western Electric 2-A Audiometer* is available. In essentials the 4-A audiometer is a phonograph to which telephone receivers may be attached. As many as 40 receivers can be connected to the audiometer in a way which permits them to be distributed through a classroom. It is not, however, always advisable to test so many children at once. The maximal number is determined by the age and training of the children, and the expertness of the examiner in controlling and motivating children. With this apparatus is employed a standardized phonograph record which reproduces a man's voice and a woman's voice reciting numbers, the loudness of the spoken numbers decreasing consecutively by uniform steps. Printed forms are supplied on which the children write the numbers as they hear them. By comparing those written records with a master sheet, the relative hearing capacity of each child is readily determined.

The test, to have significance, should be applied in a quiet place, such as the top floor of a school, with noisy activities in other parts of the building suspended.

Trained Acoumetrists Necessary. It must constantly be borne in mind that even the best acoumeter or audiometer is not a foot rule by which the child's hearing can be measured in a strictly mechanical way. The person who admin-

isters the test must be an expert, not merely with the instrument, but in the understanding and handling of children. Surrounding conditions, such as noise and distractions, often vitiate the test. The condition of attention and motivation of the child, and matters of fatigue and ennui are factors of great importance in determining the actual measurements. Probably the diverse results obtained in groups of children in different cities are due, not so much to average differences in hearing ability of the children, nor to differences in the instruments employed, as to differences in expertness in the handling of the children in the tests. Adequate expertness is not to be picked up casually, but requires painstaking application to this type of work, under competent guidance. The audiometrist or acoumetrist must not only be well trained in practical child psychology; he must also be trained in the fundamental technique of psychologic measurements by laboratory methods, or his measurements are of little value. This field is quite different from that of mental tests, and training in the mental test field does not give competence in acoumetry.

Recommended Procedure for Checking Hearing of Pupils

All teachers should be alert to the possibility of hearing impairment in their pupils, and should be particularly observant of retarded and problem children. Children who behave in the least suspiciously should be tested for hearing defects by the best means available as soon as possible. This procedure is especially important in schools where comprehensive testing has not yet been introduced.

All children in all schools should be tested by competent examiners,¹ employing an acoumeter capable of standardization and giving results comparable with results in other groups. No acoumeter which does not meet the standards of reliability of the 4-A audiometer should be employed. Every school system should maintain a corps of examiners and assistants, skilled in the technique of the instrument and thoroughly trained in its application, large enough to do all testing for the system without haste or confusion.

The test should, if possible, be applied to all children annually. From present indications, about one-third of the children falling into the *deafened* class in the test of a given year will remain in this class in tests of succeeding years. About one-third will be found in the next succeeding year to be normal, and will not again show impairment. The remaining one-third will fluctuate between the deficient and normal groups from year to year.

As greater efficiency and accuracy in testing are achieved, and as progress is made in the medical care of the individual cases, these proportions may be expected to change. But the adequate care of and provision for the children cannot be obtained unless retests are made at yearly intervals. Only in this way can the children who have become deafened within the year be discovered, and assurance gained in the cases of those who have recovered or improved.

Following the general test with the 4-A audiometer, all children who show records below normal should immediately be retested with the same instrument, and in as small groups as possible. In this way children of normal hearing and otherwise normal, who, for various reasons inseparable from the testing in large groups, have shown low records, will be eliminated; and others, whose poor records are due to mental abnormalities or defects, rather than to poor hearing, will be selected for appropriate treatment.

This final group should then be retested individually with accurate audiometric instruments capable of indicating the type of hearing defect exhibited by each child, through determination of the hearing capacity at different frequencies throughout the normal range.

All children in this group should then report to the medical examiner, who should be furnished with a report of the audiometric examination, and who should examine the condition of ear, nose, and throat, as well as the general health condition of the child, and should if possible obtain a case and family history.

If in any case the hearing condition can be brought back to normal by a simple service of the physician, such as the

removal of wax, if such treatment is authorized, or if physician is able to certify that the condition is not amenable to medical treatment, the child may then be returned to the school for handling in accordance with his general condition.

In all doubtful cases, and in cases where medical treatment is clearly applicable, the medical examiner should make specific recommendations to the parents or guardian to place the children in the hands of appropriate specialists or clinics—otological or such other as the case may require. Such specialists or clinics should give these cases particular attention, both on account of the official recommendations and because of these acoumetric and medical diagnoses which parents have already received. Full report of the examinations should accompany each child. It is important that the final medical treatment of the hard of hearing child be confined to the ear, nose, and throat. It should include possible sources of trouble, including teeth and other possible sources of infection, and nutrition and glandular difficulties.

Adequate history blanks for school use should include at least the following topics:

A brief family history, covering especially deafness and ear diseases

Notations concerning the frequency of colds in head, throat and chest, and the incidental digestive, pulmonary, and general diseases

The history of the present diseased condition—if hereditary—parent—and the probable cause

Previous operations

The occurrence and characteristics of tinnitus—ringing in the ears—vertigo, nausea and vomiting, and pain or discharge from the ear

The detailed conditions and appearances of the drum membrane and the middle ear, and of the throat, nasal passages, and sinuses.

In all hearing tests in the schools, emphasis should be placed on using adequate and quiet rooms for the tests, and

on the full cooperation of the teachers and of the children themselves. Especial emphasis should be placed on having the tests given by capable, trained examiners.

The Importance of Testing Adults and Infants

Our responsibility to the child, even in so far as the discovery of deafness and auditory impairment is concerned, does not end with the acoumetric testing of school children no matter how well carried out, nor how well followed up by educational and medical care. There are still two classes of people to be investigated: the infant and the adult.

If we are to reduce deafness in future generations, or even if we are to cope more adequately with deafness without reducing it, we must reckon with heredity as a factor. In order to know more about our children, we must not neglect their parents.¹ What types of deafness are inherited? Under what conditions are they inherited? To solve these problems, we must compare parents with children, and for adequate comparison we must also compare parents with others of their generation.

Moreover, we must care for the child not merely as a child, but as a future adult. What type of hearing can we expect the hard of hearing child to have when he grows up?

Climate, living conditions, industrial occupations, race, are all possible factors in determining the incidence of deafness. What do we know about these factors? Practically nothing. We do not know whether moist or dry climates are more conducive to deafness. We do not even know whether deafness is more rife among Negroes than among whites.

All of these unknown factors are important to the future generations of children as well as to adults. Hence the importance of the populations surveys recommended by the National Research Council. Before we can fulfil our responsibility, even to the children, surveys of adequate acoumetric type must be made of whole communities—children and adults—and these communities must be chosen so that the

whole United States population is adequately sampled. The details for carrying on these surveys are set forth in the *Research Recommendations* and need not be reproduced here.

Lack of Adequate Tests for Infants. The case of the infant is even more urgent than that of the adult.¹ Great as are the difficulties in determining the hearing abilities of young children, they are even greater for infants. In fact, there is no certain method of determining whether an infant up to one year of age hears or not.¹ It is true that, for most infants, the indications of hearing are clear. But that is mainly because most infants actually have normal hearing. The child seems to hear, and later events show that it did hear. Other children who, as later events show, did not hear, give apparent evidence of hearing. In still other cases, there is serious doubt whether the child hears in its early months. The fact that it responds to sounds and noises is not conclusive evidence, for deaf children, even those whose hearing is so low that it is practically useless, may respond to sounds, and in schools for the deaf they are trained to dance in time with a piano which they cannot see and of course do not hear. The secret of this is that they are responding to vibration, which any of us can perceive when we lay our hands on the wood of a piano, and to which the deaf child has learned to attend acutely.

The importance of discovering deafness as early as possible in child life is extremely great. Hence the need of devising new tests of auditory sensitivity, applicable to infants. This is indeed a difficult problem, but it is deemed capable of solution if intelligent effort is concentrated upon it.

EDUCATIONAL PROVISIONS

General Care and Medical Treatment

The educational needs of deaf and hard of hearing children are intimately bound up with the problems of general care and medical treatment. The greater part of the

general work, especially for the hard of hearing, must necessarily be done through the schools, both public and private. This includes the discovering of the cases through school tests, and the indication of special medical examination and treatment. The vocational training of the handicapped child is specifically a school problem, and the dependence of the social adjustment of the hard of hearing child on his general and vocational adjustment is obvious.

For the deaf, as distinguished from the hard of hearing, the interdependence of the educational, vocational, medical, and psychologic problems is just as definite. All deaf children should be placed in schools specially designed for their care in training, for in no other way can they receive proper attention, and nowhere else can they form the basis of proper social adaptations.

Our educational problems are thus divided in a twofold way. First, the problem of the deaf child and that of the hard of hearing child are radically different. Second, for both groups there are the problems of general education, of vocational training, and of special training.

General Education

Deaf and hard of hearing children need the same type of general education as the normal child, but there are great differences in the necessary administration. The hard of hearing child, in the majority of cases, should take exactly the same school subjects as other children, and mostly in the same classes with them. Hard of hearing children of normal mental level, if properly handled in the grades, may go through high school and college just as other children do. At the same time, it is necessary that these children should receive special training in order that they may profit by the regular school instruction. Many of them also require special personal treatment by the teachers: for example, placing in favorable seats, and a due regard on the part of the teacher for the child's defect. This involves not only the careful acoumetric determination of the exact

grade of every child's hearing, but also an understanding on the part of all school teachers of the characteristics of the hard of hearing child.

The Training of Teachers. It is not to be expected, nor is it necessary, that all teachers should receive intensive training in work with the hard of hearing. It is necessary, however, that all school systems, and many private schools, should include on their staffs a sufficient number of specially trained teachers to advise the general teachers in dealing with hard of hearing children, and to render them expert assistance in dealing with individual cases. In the case of the deaf child, who is handled in an institution for the deaf, all of the teachers must be specially trained.

For these reasons, the National Research Council recommendations for the better training of teachers of the deaf and the hard of hearing are especially important.¹ There is, at present, difference of opinion concerning various details involved in the training of such teachers, but there is general agreement that adequate bases for decisions on these points have not yet been obtained. The matter of balance of special and general training, of supervised practical experience, of experience with normal children, and length of training set forth in *Research Recommendations*¹ cannot be settled without intensive and extensive research on the problem. Improvement in instruction is not at present merely the more extensive and intensive application of known formulas. The methods, principles, and practical procedures are still in need of determination.

The human material from which an improved teaching force is to be built is of especial importance. At present, the recruiting of this force is somewhat uncertain in its nature: many teachers of the deaf are led into the work because of deafness in their families, others for miscellaneous reasons. The economic inducements for the better grade of person to enter this profession are sadly inadequate. The actual opportunities offered are not properly evaluated, nor is adequate information available to those who might be excellent candidates. Although we know that the present situation is

bad, full details are not available. As a first step toward the improvement of the teaching force, therefore, the surveys of the present personnel included in the recommendations of the National Research Council¹ are urgently recommended as a basis for further work.

The Curriculum. The general curriculum for pupils in schools for the deaf is of especial importance. The curricula of regular public or private schools cannot be simply adopted or adapted in these institutions. Not only is there lack of agreement as to the nature and balance of the proper curricula for the deaf; there is also lack of information as to what is actually being taught in these institutions. A few schools have issued statements of their curricula, but most of these are out of date, and probably do not represent the actual present curricula. Hence it is essential as a basis for studies directed toward improvement of the curriculum, that the survey of present instruction recommended in the National Research Council program should be carried out as soon as possible.¹

Classifying Children. Assuming that the hearing capacities of all children in regular public and private schools have been adequately determined, and that properly trained general and special teachers are available, the hypacusic children, according to the best present practice in the public schools, are to be divided into three groups:

Children having little language difficulty, and who are able to take all of their regular work in classes with normally hearing children, but who require additional work in lip reading classes once or twice a week

Children who are not able to profit by instruction in regular classes, and who need not only lip reading lessons but also a special teacher and instruments for amplifying sound and hence may take certain subjects in the regular classes, but need special classes in all subjects with heavy language requirement

Children who are deaf in the technical sense, that is, whose residue of hearing is so low that they cannot usefully hear speech even when it is amplified, and hence must learn lip reading, be taught to speak, and must receive all of their instruction from special teachers.

Intellectual Measures. An important consideration, in providing for the improvement of deaf children and the more seriously affected hard of hearing, is the use of measures of intellectual capacity and of educational progress. The intelligence tests and the educational tests which have been developed for use with ordinary children are not strictly applicable. It must be constantly borne in mind that a child may be mentally retarded because of his lack of adequate hearing, and that mental measurements are significant only in so far as the measures employed are designed to fit the conditions under which the child develops. For these reasons, the interests of the deaf child require the further development of intelligence tests and achievement tests for the auditorily deficient.¹ This development will require two or more years of the time of a group of skilled workers in the mental measurement field, and should be started as soon as possible.

Special Training

Lip Reading. The important special training of the hard of hearing child is in lip reading, and for some, in speech correction. With ability to read lips easily, the hard of hearing child is brought nearer to the normal child, both for school purposes and in social life. When he does not hear the words of his teacher or his companions, he can see them on their lips, and if the teachers are careful in their treatment, and turn their faces toward the class in speaking, he can be handled, for the general curriculum, in the regular classes.

In institutions for the deaf, lip reading is of course fundamental. For both the deaf and the hard of hearing it is

especially important that instruction in lip reading be begun at the earliest possible age, in order that the child shall not be unduly handicapped.

Classes in lip reading have been established in the public day school systems in more than sixty cities in the United States. Obviously this is but a small beginning. Classes should be established as soon as possible in every city school system in the United States, and adequate provision made for rural schools. No single educational step is of greater importance for the hard of hearing child than lip reading. Even the child suffering from slight impairment should have the benefit of this instruction, to provide against the possibility of his hearing problem becoming more acute. All of these school systems are inadequately staffed, and future demands for the selection and training of teachers for this special work constitute an important problem. Although several universities and teacher training schools offer courses in lip reading, among them Teachers College of Columbia University, New York City; Boston Teachers College; Michigan State Normal College, Ypsilanti; College for Teachers, Johns Hopkins University, Baltimore; Rochester University, New York; the University of California, Berkeley; Winthrop College, Rock Hill, South Carolina; and Hunter College, New York City, additional provision for training these teachers must be made. They must have a broad foundation in the general problems of the hard of hearing child, and should be trained to supply expert assistance in the general treatment of these children.

The extension of the instruction in lip reading¹ to every child which needs it should not, however, be made on the present bases of the methods and techniques. There are several methods of teaching lip reading and speech in use in the United States, and each has its advocates. A comparative study of these methods, to determine their relative value, to discover further improvements, and to effect ultimately a standardization should be put under way as soon as possible.¹

Speech Correction. The speech of the hard of hearing

tends to become unnatural, and difficult to understand. This is not merely a disadvantage in communication; it is an unnecessary source of humiliation, tending to increase the child's social disability. Correction of speech and voice training should begin at an early age, and should be resumed whenever necessary.

Some public school systems have classes for speech correction, but usually in these speech classes little attention is paid to the specific needs of the hard of hearing child. The strengthening and extension of this work are among our most important recommendations.

The teaching of speech is in a condition still more chaotic and less developed than the teaching of lip reading. The present procedure is difficult, and the results not highly satisfactory. The continual efforts of educators of the deaf, psychologists, and phoneticists are required to improve existing methods and to devise new ones if possible. The use of accessory mechanical aids is particularly worthy of consideration. The hopes recently held out concerning the usefulness of kinesthetic stimulation as a means of reception of communication have been largely disappointed, but it seems possible that it may give aid in the teaching of speech to the deaf, as it has undoubtedly done in the education of the blind-deaf.¹

Measurements Essential. At the present time, the greatest obstacle to improvement in the teaching of speech and lip reading is the lack of adequate measures of performance and progress. How shall we determine the progress of a child in lip reading when we have no means of measuring his ability at any point? How shall we compare the results of different methods, or of different teachers, if we have no means of measuring progress under any of them?

Definite plans have been prepared for the development of scales for the measurement of proficiency in lip reading and in speech.¹ Provisions should be made immediately for the carrying out of this program, since further progress in instruction is absolutely dependent upon it. Probably this program can be completed in three years from the time when adequate funds are provided for it.

VOCATIONAL TRAINING AND PLACEMENT

Earning a living is a serious problem for the great majority of human beings provided with efficient senses. For those handicapped by defective hearing the problem is even more acute. Certain occupations are closed to the deaf, and some occupations are not suitable for those who are even slightly deafened. On the other hand, there are many occupations in which deafness is really no handicap, and it may be that for some lines the partially deaf even have an advantage over ordinary persons.

The Urgent Need

Aside from the earning of daily bread, the provision of a vocation is socially and psychologically more important for the person of defective hearing than for the ordinary person. The deafened person, cut off from full social intercourse with his fellow man, needs the stimulation and preoccupation of an active job, not only to prevent morbidity, but also to give him the contacts with social and economic reality which only participation in the world's work can supply. In this respect even routine labor has its values.

A basic problem for the great number of persons who suffer from impaired hearing, therefore, is the selection for each person of a vocation suitable to his auditory capacity, and for which also he is physically and mentally fitted. It involves also the adequate training of the person for this vocation. Such training, to be of maximal advantage, must begin early in life, and the selection of a vocation should be made before school training is over.

Practically all schools for the deaf make some effort toward vocational training. At present it is difficult to estimate their success. There is neither sufficient diversity of occupational training to make adequate individual selection possible, nor is the selection scientifically planned. While some institutions are giving training in a few vocational lines, as well as it can be done under present conditions, it is openly admitted that, in general, instruction is poor even

in the trades that are taught. It is significant that the graduates of the institutions for the deaf seem to show a widespread tendency to adopt in later life occupations for which they were not trained in the institutions. Generally speaking, no attempt has been made at vocational guidance for the hard of hearing.

The National Research Council Conference on problems of the deaf and the hard of hearing, after detailed consideration of this grave situation, recommended that investigations be made of the occupational possibilities for the auditorily impaired, and of the methods of training them for these occupations.¹ This recommendation is regarded as of the highest importance, and every possible effort should be made to carry it into effect.

In spite of the support and advertisement it has received, the movement for vocational guidance for ordinary children has not attained much success. Directors of vocational guidance in the school systems admit the paucity of useful results, and their perplexity as to what to do about it. This is largely due to the broadness of the field, and to the lack of a sufficient number of properly trained workers. The problem has, in fact, been attacked too generally, with a tendency to apply expedients instead of discovering facts and principles suitable for application.

Improvement Is Possible

It is believed that progress can be made in the restricted field of the deaf, where the limitations are clear and the problem sharply defined; that effort will be advantageous not only in this limited field, but also for the ultimate solution of the problems in other vocational fields. For the present, however, these efforts must be concentrated on research. When the facts have been determined, applications are readily made.

Research work, and placement work in the institutions and in the general school systems, in order to be fruitful, should be carried out in due cooperation and advisement

with state and other agencies for rehabilitation and employment. The state agencies especially have already a large fund of information concerning available occupations, and serve as sources of information for institutions and training agencies in regard to changing trends in the industrial world.

The several organizations in the personnel field should also be drawn upon, an effort made to interest them more intensively in our specific problems and to correlate their work more definitely with that of the institutions and schools. Several of our universities have departments actively engaged in promoting better means of occupational selection and should be induced to take a more specific interest in the problems of the hard of hearing and the deaf.

SPECIFIC PROBLEMS OF THE AUDITORILY HANDICAPPED

The Infant and the Young Child

Added to the difficulty of surely detecting impairment of auditory function in early life, and the urgent need of research on this problem, is the further problem of what to do about the deaf or deafened infant after he is discovered. This problem has two aspects: protection and assistance of the individual child; opportunities for increasing our knowledge of deaf children in general.

The period of infancy is a critical one for every child, but particularly so for the handicapped child. The deaf child, when he enters an institution, is already retarded in mental development, because he has been largely precluded from learning the basic things which the ordinary child picks up from parents, other children and adults. He starts his school work under a terrific additional handicap. This should be, and can be, largely avoided if proper provisions are made. A few schools have departments for deaf infants. The Central Institute for the Deaf in St. Louis is one of the pioneers in this field. These sporadic developments, however, serve only to accentuate the gravity of the prob-

lem and to indicate the possibility of its solution. There is a great need for more general provision of this sort, but a still greater need for the development of methods for the handling of these infants and for the training of personnel to handle them.

The Need for a Nursery School. The recommendation of the National Research Council for the establishment of an adequate experimental nursery school for deaf children¹ seems to point to one of the most significant forward steps which it is possible to take. Owing to the scope and difficulty of the problems of infancy, and their importance in the whole program of relief for the auditorily handicapped, no existing institutions can adequately cope with them until a foundation of this sort, staffed fundamentally by experts in child development, shall have made its contributions. Such an institution should carry on its work in the closest possible cooperation with agencies and individuals working on the general educational, medical, and psychologic problems of the auditorily handicapped. The scope of such cooperation, and the range of problems lying in the infant field, outlined in impressive detail in the *Research Recommendations*, are well worthy the consideration of all who are interested in auditory handicaps.

Problems of Heredity

Deafness Often Inherited. The fact that deafness is often inherited, or runs in families, has long been known. The procreation of children who are destined to be born deaf or who inherit certain tendencies to auditory impairment later in life is a great evil and its prevention must be persistently sought. Beyond this, the topic is one of conflicting theories and uncertainties. Except for a few limited and almost negligible types, the nature of inheritable deafness is unknown. Moreover, it is not an easy matter to determine whether the deafness of a given individual is inherited or not, and since the results of marriage of deaf persons depend primarily upon this factor, this is a vital matter.

The study of heredity, in this as in other fields, cannot be simply turned over to the geneticist. It demands also the attention of the expert on hypacusia. The determination of the type and degree of deafness is the primary problem in each case. The work of the physiologist and the pathologist specializing on the ear, as well as of the psychologist, is fundamentally demanded. Unless each case is expertly determined, the data gathered in case and family histories, since it gives rise to misleading generalizations, is useless.

The cooperation of the nursery school for deaf infants in this work has been outlined in the *Research Recommendations*.¹ The contributions to be made by the various surveys recommended depend on the scientific thoroughness of these surveys. The place of medical research will be determined by the progress made on the physiologic and pathologic problems of the ear. All this work should be cooperatively organized and pushed as rapidly as possible.

Prevention of Deafness

Prevention is better than cure, but even aside from the problems of inheritance, to quote one of our most eminent otological specialists: "We do not know how to prevent deafness." The reduction of the number of cases and the better treatment of scarlet fever and other general diseases which tend to impair the auditory organs have done much, and in many cases the prompt and proper treatment of local pathological conditions prevents or lessens the detrimental results. But there are still many types of deafness of which the causes are obscure, or the method of prophylaxis or amelioration unknown. And these cases are probably in the great majority. For the ultimate discovery of means to prevent deafness in a more comprehensive way, we must utilize the results of further research along various lines: medical, physiologic, and psychologic. The promotion of research along the whole front of attack is urged as the first step toward the prevention of deafness.

Social and Personal Problems

Persons deprived of normal hearing tend to become socially maladjusted and to develop more or less serious psychopathic attitudes. They live in a world more or less isolated from that of their fellows, and unless adequate provision is made for supplementing means of communication and for compensation for the residual handicap, maladjustment is almost inevitable. The major sources of relief and protection are: training in lip reading and speech; the use of amplifying apparatus; better general and vocational training; adequate occupational placement. In order that these measures of relief and protection may be effectual, however, a large amount of social and personal adjustment work remains to be done. To be maximally successful, this work must begin in early life. Specific and intensive study of the problems of social and emotional adjustment, as itemized in the *Research Recommendations*¹ is needed. This study must commence with the foundations. It is not a matter of devising applications; the mere application of current psychiatric theories to these cases avails little. Cooperative research by educators and psychologists in institutions for the deaf, in the nursery school, and in the general public and private schools, should be organized to discover more detailed facts and sound principles on which the solution of psychologic difficulties of auditory origin may be based.

Complications of Other Handicaps

Children suffering from auditory impairment are no more immune to other handicaps than persons of ordinary hearing ability. In the not remote past, deaf persons were usually "dumb" as well. This inability to speak was, in all except a trivial number of cases, due merely to the inability to hear; practically all of the deaf are capable of learning to speak. In so far as methods of speech instruction are improved and extended the deaf-mute problem disappears.

The Blind-deaf. According to the latest reliable figures,

there are 618 persons of all ages in the United States and 47 in Canada who are both deaf and blind. Of the total blind-deaf from the United States, 35 under the age of twenty-five are in institutions for the deaf or institutions for the blind, and 20 blind-deaf are in need of schools. These young persons constitute a small but definite problem. They are misplaced in either institutions for the deaf or institutions for the blind; hence each school evades its responsibility by recommending that these children be placed in an institution of the other type. A national or central school or institution for patients of this type has been urged, but since each case needs individual instruction and attendance, some experts deem it impracticable. Parents can seldom afford the expense of private tutors and attendants for these cases, whose care must be continued practically throughout life. They certainly should not be scattered through other institutions, and local authorities are not in a position to provide for them to a satisfactory extent. There seems on the whole a probability that this care could be given more scientifically and economically in a single institution. Hence, a special survey of this situation by a specially constituted committee is recommended.

There is little accurate information available about the blind child who is also hard of hearing. Obviously these cases belong in institutions for the blind, but in institutions provided with teachers skilled in work with the hard of hearing and competent to instruct in lip reading by the sense of touch.

The Feeble-minded Deaf. Whether the percentage of true feeble-mindedness is as great among the deaf and the hard of hearing as among the general population is not known. It may be greater. Evidently the situation varies in different parts of the United States, some heads of institutions reporting that there is "no problem" concerning such cases, while others state that the problem is a serious one. Here again, there has been a tendency to evade responsibility, principals and superintendents of schools for the deaf recommending that these cases be placed in institutions for the feeble-minded, and vice versa.

Some schools for the deaf have maintained special classes for the feeble-minded, but whether this arrangement is justified is to be seriously questioned. The institutions for the deaf are concerned fundamentally with persons whose disabilities may be compensated for, and who, with such compensation, may become useful members of society. Usually the children are fully normal. The feeble-minded—those so low in mentality and moral responsibility as to be unfit for citizenship—are permanent losses to society and their progeny is a detriment. They must be protected and made as comfortable as possible, and society must be protected against them. This is true of the deaf-feeble-minded, as well as of the merely feeble-minded. Since an expensive educational program for these cases is useless and wasteful, it seems advisable to segregate them in a limited number of institutions for the feeble-minded, with arrangements for special provisions for their care.

The situation is complicated, however, by the fact that many children classed by psychiatrists as feeble-minded are really merely retarded because of deafness, and the converse fact that feeble-mindedness is especially difficult to detect among deaf children. The importance of developing a better technique for the detection of deafness, and of devising more adequate tests of intelligence applicable to deaf children, stressed in earlier sections of this report, and of the thoroughgoing application of these tests is again emphasized.

The Crippled-deaf. Children who are defective in hearing are at least as subject to crippling accidents and diseases as ordinary children. The crippled-deaf child does not constitute a large problem. But the problem is a serious one for the few thus handicapped. The handling of these cases, however, is dependent on the degree and type of crippling, as well as upon the degree of auditory impairment. Certain cases can be handled in institutions for the deaf, or even in the public schools. Others must be cared for in institutions for crippled children. The staffs of institutions having such cases should include an adequate number of teachers or attendants thoroughly trained in work with the deaf and hard of hearing and able to teach lip reading.

ORGANIZATION OF AGENCIES

The multitude of problems, the practical needs, the intricate interrelations of the problems outlined, clearly indicate not only the need for an integration of the work which is being done, but the greater work which must be done, for the benefit of the millions afflicted with auditory impairment. This investigation can be promoted by institutions, by organizations, and by committees.

National Organizations

There are, at present, seven national organizations for the benefit of the deaf and hard of hearing, five of which stress the needs of the child. These with their dates of organization are: the Convention of American Instructors of the Deaf, 1850; the Conference of Executives of American Schools for the Deaf, 1868; the American Association to Promote the Teaching of Speech to the Deaf, 1890; the Society of Progressive Oral Advocates, 1918; the American Federation of Organizations for the Hard of Hearing, 1919. Two other organizations which do not particularly concern themselves with problems of childhood are the National Association of the Deaf, 1880; and the National Fraternal Society of the Deaf, 1901.

The organization known as the Knights and Ladies of de l'Epee which is concerned primarily with the raising of funds for a monument to the Abbé de l'Epee, and the Hebrew Association for the Deaf, which confines its activities for children to religious instruction, are less general in type.

In addition, the National Research Council maintains in its Division of Anthropology and Psychology a Committee on Problems of Auditory Deficiency; the American Otological Society has a committee on research; and a Joint Committee on the Prevention of Deafness, with members from various educational, medical, and scientific organizations, has been formed (1930) under the auspices of the American Medical Association.

The Convention of American Instructors of the Deaf offers an opportunity for discussion of topics bearing on the education and interests of the deaf. While its membership is restricted to adults who are actively engaged in educating the deaf, its influence penetrates the classroom and extends into every portion of the field of activity by and for the deaf. It has sections devoted to kindergarten, oral, auricular, industrial, normal and art instruction, and the reports of its biennial meetings are printed and distributed as Senate documents and constitute a valuable repository of information.

The Conference of Executives of American Schools for the Deaf is now informal, but is in process of incorporation. Through its meetings and discussions, it has done much toward outlining the curricula of schools, including vocational training; has assisted in standardizing the requirements for the training of special teachers of the deaf; has outlined a course of study for normal training classes; has investigated and reported on the salaries of teachers, and has done much to elevate the education of the deaf throughout the world. It publishes the *American Annals of the Deaf*, established in 1848, and the official organ of the Convention of American Instructors of the Deaf.

The American Association to Promote the Teaching of Speech to the Deaf, established by Alexander Graham Bell, has extended its activities to include a broad interest in the educational problems of the deaf, the professional advancement of teachers and the assistance of parents of deaf children. It owns and operates the Volta Bureau, established by Bell "for the increase and diffusion of knowledge relating to the deaf," which publishes the *Volta Review*, the official organ of the Association, and the *Auditory Outlook*, the official organ of the Federation. The Bureau also serves as an information center and maintains a library which contains the most valuable collection of books dealing with deafness, to be found in America. The endowment of the Volta Bureau is inadequate to maintain its work on the plane it was intended to occupy, and financial relief is urgently needed.

The Society of Progressive Oral Advocates was founded

by Doctor Max A. Goldstein to promote the oral education of the deaf, and draws its membership from parents of deaf children and workers in all of the fields in which the interests of the deaf child are involved. Reports of its annual meetings are published in *Oralism and Auralism*.

The American Federation of Organizations for the Hard of Hearing concerns itself primarily with the lesser degrees of auditory impairment and includes in its membership many members of local leagues and clubs for the hard of hearing. Such groups may become constituent members of the Federation, and any person, whether or not a member of a local group, may become an individual member. Federation headquarters are at the Volta Bureau in Washington. Its interests and activities include the promotion of lip reading and audiometric testing, mechanical devices for aiding hearing, employment, protection against charlatans, and social welfare and relationship of the hypacusic. While the Federation promotes the formation of local leagues for the hard of hearing and works largely through them, it is also carrying out a definite and hopeful program of work with isolated cases, conducted by correspondence.

Need of Reorganization

These organizations are interlocking and overlapping, and although several of them are excellently equipped for discussion, and for legitimate and necessary propaganda and the appeal to public interest, none of them is in a position to conduct research. The Committee on Problems of Auditory Deficiency¹ and the Committee for the Prevention of Deafness¹ are intended specifically to supply the coordination which is clearly needed.

Reorganization of the five national societies, known currently as *The Convention*, *The Conference*, *The Association*, *The Society*, and *The Federation*, to eliminate overlapping activities and to secure better coordination, is needed. With the proper increase in activities along necessary lines, this lack of coordination would become a serious

matter. With the aid of the Advisory Committee of the National Research Council this reorganization can be accomplished as soon as funds for more active work are secured. After such reorganization, funds conditioned on proper reorganization and cooperation should be allotted to the proper groups to provide for adequate publication of research and other information, to maintain a comprehensive central library adequate for research purposes, and for the promotion of such social and educational work as may fall properly within the province of these organizations.

RECOMMENDATIONS

1. The discovery of the deaf and the hard of hearing children should be promoted in every possible way. To this end, audiometric surveys of school children should be extended until the entire school population is included, and annually tested. This is primarily work for the school systems, assisted by the various agencies and organizations in the field.

2. Every child found to have impaired hearing should be given proper medical attention, so that the defect may be corrected or its progress arrested, if possible.

3. All public school systems should be urged to take steps as rapidly as possible towards the installation of special classes and special instruction for hard of hearing children, in accordance with the analysis of this report.

4. The department of public instruction in each state should be urged to provide means and personnel in its organization for the development throughout the state of ways and means for the early discovery of the hard of hearing child, and the provision of adequate means for his school treatment and instruction.

5. Population surveys, adequate in scope and extension to determine standards of age, race, occupation, and local differences in auditory defect, and to give information as to the incidence of different types of defect, should be undertaken by agencies competent to carry the surveys through to completion over the succeeding term of years.

6. Provision should be made, through some agency such as the National Research Council, for the integration and promotion of basic scientific research on problems of audition—physical, physiological, and psychological—the results of which shall be contributory to the solution of the problems of the deaf child and the hard of hearing child. This program should look to activity during a period of fifteen to twenty years, and should provide immediately for preliminary work essential to the further pursuit of this and other programs. Included in this preliminary work are the production of adequate scales and tests for lip reading and speech, and a survey of the actual standard of work in schools for the deaf.

7. Provision should be made through an agency competent not only in regard to general educational progress but also in regard to the special work for the deaf, for the prosecution of educational research which shall contribute to the improvement of the general, special, and vocational education of the deaf and the hard of hearing, both in public schools and in schools for the deaf. Such an agency might be constituted through an existing institution working under the direction of a national committee. It should work in cooperation with, and largely through existing universities, schools for the deaf and other agencies, integrating the total program, and disbursing funds necessary to supplement the resources of these institutions.

8. Provision should be made for the establishment and conduct of a nursery school for deaf infants, which, while relatively independent in its operation, should work in cooperation with the various other agencies in the field of the deaf and hard of hearing. Such a school should be staffed primarily with persons trained in modern nursery school methods.

REFERENCE

1. *Research Recommendations of the Second Conference on Problems of the Deaf and Hard of Hearing*. Reprint and Circular Series of the National Research Council, Washington, D. C., No. 88, 1929, pp. 11, 10, 23-24, 27-28, 13-14, 21-22, 16-17, 18, 26-27, 34, 35, 38, 41.

THE VISUALLY HANDICAPPED

ACKNOWLEDGMENT

The purpose of this report is to present the number of blind children, the extent and adequacy of existing provisions for them, and to make recommendations for a future program of activity and research.

Grateful acknowledgment is made of the generous assistance given by Doctor J. L. Clifton and Doctor T. C. Holy of the Ohio Department of Education, in making accessible to the Subcommittee the data collected by them in January and February, 1930, through an inquiry sent to residential schools for the blind; and also of the unstinting cooperation received from all those connected with work for the blind. The responses to questionnaires and to letters were so full and so frank that they have considerably enhanced the value of this report. The help received from workers in allied fields, especially from those working with crippled and with subnormal children, is also gratefully acknowledged.

THE VISUALLY HANDICAPPED

THE handicap of blindness or of low vision is no longer regarded as an insurmountable barrier to achievement. Nevertheless, a child thus burdened is at a great disadvantage unless he receives a specialized training designed to offset his physical limitation. In most states the education for the visually handicapped is, as it should be, compulsory; and it behooves the states to provide an education which will meet the needs of blind and partially seeing children when, as adults, they must enter the social and economic world of the seeing.

Since the requirements of the blind and of the partially seeing child differ considerably, it is essential that the distinction between them be kept clearly in mind. In this report a child is considered blind if he is totally without sight or if his vision is so defective that he cannot or should not use his eyes as the chief medium for obtaining his education. A partially seeing child is one with defective vision who can be taught through the eye rather than through the finger but who cannot or should not make extensive use of ordinary print.

CARE, EDUCATION, AND TRAINING OF BLIND CHILDREN

Extent of Problem

Since no adequate method has been devised whereby a census enumerator can determine degree of vision accurately yet quickly, figures based on census returns are merely indicative of the number of blind children in the United States rather than final. According to the 1920 Census there were 52,567 registered blind people in this country. Ages were reported for 51,919 of this number. While this is only a

part of the total blind population, the number is sufficiently large to be safely used as a basis for figuring percentage distributions of blindness according to age.

Table 1 is a record of percentage distribution of blind population and total general population according to age groups.

TABLE 1

PERCENTAGE DISTRIBUTION OF BLIND POPULATION AND TOTAL GENERAL POPULATION, ACCORDING TO AGE GROUPS ^a

Age groups	BLIND POPULATION		GENERAL POPULATION
	Number	Distribution Per cent	Distribution Per cent
Under 5 ^b	367	.7	10.9
5 to 9	1,403	2.7	10.8
10 to 14	2,393	4.6	10.1
15 to 19	2,419	4.7	8.9
20 to 39	8,522	16.4	32.4
40 to 59	12,278	23.6	19.4
60 and over	24,537	47.3 ^c	7.5
Totals	51,919	100.0	100.0

^a "The Blind Population of the United States, 1920," *Monograph of Department of Commerce*, Washington, D. C., Bureau of Census, 1928, Table 16, p. 32.

^b Children under one year constitute less than .1 per cent of the total blind population.

^c Adjusted by .2 per cent, not accounted for in the census bureau figures.

A recent unpublished study made by the American Foundation for the Blind, reveals an estimated blind population of 56,566 for 17 widely distributed states. Since the records kept by the agencies in these states are known to have a high degree of reliability, their figures have been used as a basis for estimating the blind population in the country as a whole. The figure given by the 1930 *World Almanac* for the total population of these states is 60,683,000, that for the total population of the country is close to 120,013,000. As the population of these 17 states is thus almost half that of the entire country, the total blind population probably approximates 114,000. However, all these figures, including those of the *World Almanac*, are based on estimates only.

Table 2 is an estimate according to age groups of the number of blind people in America.

TABLE 2

ESTIMATED NUMBER OF BLIND PEOPLE IN THE UNITED STATES,
ACCORDING TO AGE GROUPS ^a

Age groups	Age distribution of total blind population	
	<i>Number</i>	<i>Per cent</i> ^b
Under 5	798	.7
5 to 9	3,078	2.7
10 to 14	5,244	4.6
15 to 19	5,358	4.7
20 to 39	18,696	16.4
40 to 59	26,904	23.6
60 and over	53,922	47.3
<i>Totals</i>	114,000	100.0

^a Figures based on unpublished study of seventeen selected states by the American Foundation for the Blind, Inc.^b Based on Table 1.

Probably all existing estimates of the size of the blind population include many people who should not be thus classed, and ignore others who, because of some additional disability, are being cared for in institutions not ordinarily concerned with the blind.

In 1920 the Federal Bureau of the Census attempted to supplement the census returns by a special study of the blind through the medium of blanks sent directly to blind people themselves. This method of procedure resulted in the accumulation of much interesting data, the validity of which is qualified by the fact that those very sections of the country in which the least work is being done for the education and training of blind people are the ones least represented in the data.

Since the Census Bureau considered the expense of this procedure and the time consumed disproportionate to the value of the results obtained in the 1920 Census no special study of this handicapped group was attempted in connection with the regular 1930 Census. It is to be hoped, however, that the way will be left open for the conduct of special studies of the blind to be sponsored by the Census Bureau but possibly to be executed, in part at least, by private agencies. Under such an arrangement the bureau might concentrate its efforts on obtaining more adequate records con-

cerned with the welfare of the blind, where a census of the blind population would be of most service.

According to the figures in Table 2 there are approximately fifteen thousand blind people twenty years of age or under. Of this number 5,900 are children in schools and classes for the blind, about 5,400 being in residential schools, and 423 in day school classes. In addition to these a scant 100 are cared for in nurseries for blind babies.

Probably the largest group at present outside of any educational classification is that of the aurally and visually handicapped. About 100 of the 618 people recorded as being thus doubly handicapped are known to be of school age.

Health Provisions and Their Adequacy

Importance. To no group of children is good health of more fundamental importance than to those without sight. It is the rare blind child who is not compelled to work harder than seeing children of the same calibre to attain the same social and vocational success. If this child must struggle not only to rise above the handicap of blindness, but also fight against constant ill health, he is in no condition to command for himself an adequate place in life either vocationally or socially. Too many blind children suffer from lowered morale and poor physical stamina which often result from mental and physical inactivity. If a blind child is to receive a normal mental development he must have a more stimulated, active babyhood than is often the case. For the sake of the future happiness and satisfactory adjustment of these children, schools and classes for the blind should provide intelligent, interested, and extensive health conservation service which is psychiatric and psychological as well as medical.

General Provisions. Information gathered from various sources indicates that most residential schools and all day school classes for the blind are making reasonable provision for medical service. The quality of that service as it applies to children in the residential schools cannot now be ascer-

tained, for while it is quite certain that the pupils in the braille classes in the public schools are receiving at least as good care as the seeing children in the same school system, it is not known whether or not this care is adequate for the special needs of blind children. Twenty-eight residential schools and 11 braille class systems report some arrangement for the psychologic testing of their pupils. Of this number 4 of the residential schools and 7 of the braille class systems report psychologic work which may be called definitely clinical in character. The growing demand for psychologic service which is qualified to deal with blind people cannot at present be met.

Preschool Children. Very little is known about organized work for maintaining and improving the health of preschool blind children. Cleveland, Ohio, provides a visiting teacher whose duty it is to keep in close touch with the blind baby in its home, watching carefully over its physical and mental health. The New York State Commission for the Blind and the New York Association for the Blind, otherwise known as the Lighthouse for the Blind, also give training to the parents of preschool blind children. The 4 nurseries for blind babies which are known to exist in this country are deeply concerned with the physical health of the children, but probably not with their mental training.

Club federations and service organizations in different sections of the country endeavor to locate all blind babies in their territory. Little is known as to whether the actual accomplishments of these organizations are commensurate with the needs of their localities, or with regard to the efficacy of the efforts undoubtedly being made by other state and local groups throughout the country to improve and maintain the health of such children.

Physical Examinations. Table 3 indicates the importance attached to frequent physical and ophthalmologic examinations and gives some clue concerning the attitude of these schools and classes toward the admission of blind pupils with positive Wassermann reactions. Most of the schools admitting children with positive reactions do so only upon a doc-

tor's certificate, and require regular treatment until the reaction becomes definitely negative. One or two schools have made the administering of the Wassermann test a part of their regular medical routine.

TABLE 3

POLICY REGARDING PHYSICAL EXAMINATIONS OF PUPILS IN 48 RESIDENTIAL SCHOOLS AND 17 BRAILLE CLASS DEPARTMENTS

	RESIDENTIAL SCHOOLS		BRAILLE CLASSES		TOTALS	
	Answering yes		Answering yes		Answering yes	
	Number	Per cent	Number	Per cent	Number	Per cent
Examination required for admission:						
General physical.....	37	77.1	8	47.0	45	69.2
Ophthalmologic ^a	31	64.6	15	88.2	46	70.8
Reexamination:						
General physical						
Periodic.....	25	52.1	11	64.7	36	55.5
Occasional.....	4	8.3	..	...	4	6.2
According to condition	15	31.3	2	11.8	17	26.2
Ophthalmologic:						
Periodic.....	24	50.0	7	41.2	31	47.7
Occasional.....	5	10.4	1	5.9	6	9.2
According to condition	9	18.8	6	35.3	15	23.1
Admission with positive Wassermann.....	24	50.0	10	58.8	34	52.3

^a Of the schools reporting, 3 qualified their statements. One accepts a doctor's certificate; another requires examinations for partially seeing children only; the other reserves the examination until after admission.

Treatment of Additional Handicaps. Although no extensive investigation has been made of the prevalence of additional mental and physical handicaps in blind children, there is a growing realization that these other handicaps are often greater drawbacks to their social and vocational adjustment than blindness itself. From this point of view the most obvious handicaps are: additional physical defects; peculiar mannerisms; general physical debility; nervous instability; speech defects.

All of these involve both physical and mental health. Many of them have developed because of the ignorance of the parents or guardians and the indifference of the community with regard to the special needs of young blind children. In the day school classes, additionally handicapped blind children receive treatment quite as good and from the same

sources in the community as the seeing children. In residential schools there is a wide variation in the treatment given to these types of cases. A few of the well-to-do schools make regular provisions for clinical attention, either through arrangement with local or state agencies, or through resident service. One important school has on its staff a corrective speech teacher, a psychologic examiner, and two corrective gymnastics teachers. In addition to these, it maintains a full-time nurse, a visiting physician, two part-time dentists, and receives additional service from leading specialists. Two state schools, through arrangements with agencies in their rather unusual communities, are known to have a program of medical and psychologic service at least as comprehensive as this. Such resources, however, are not at the command of the majority of schools.

In most schools the psychologic service is limited to intelligence testing. Only 4 schools reported work genuinely clinical in character. Whereas comprehensive clinical service will go far toward removing these drawbacks and toward the proper adjustment of a blind child, intelligence testing alone, while rendering an important and fundamental service in diagnosis, makes only a small contribution toward the solution of the more difficult problem cases.

Constructive Health Program. While scouting and similar activities for both boys and girls are developing rapidly in schools for the blind, few data have been assembled regarding such activities for children in day school classes for the blind. The chief difficulty in connection with such group work is finding leaders who understand the problems of blind children, who are thoroughly versed in scouting law, and who have the right personalities to properly influence the boys and girls under them. Because of this difficulty and because of the variation in the caliber of pupils who are, so far as age is concerned, at a given time eligible to join the scouts, the scouting activities in any one school may vary widely from year to year, both in extent and in desirable influence. There should, therefore, be some organized system of outdoor activities which will insure the benefits of

such life for every pupil in the school. The National Athletic Association of Schools for the Blind, which came into existence in 1908, had many ups and down until after the World War; since 1921 it has progressed steadily, taking in more and more schools. Each school has its own meet on its own athletic ground, the scores being turned in to the officers of the association. Since 1922 there have been two silver trophy cups, one for the boys and one for the girls, for which the schools compete.

In addition, a few of the schools hold a separate inter-school athletic meet each year, the best athletes from each school contesting against each other. The meet is held at a different school each year.

Most schools for the blind emphasize the importance of outdoor playground activities, but apparently none has made an extensive research study of the specific activities most beneficial and most interesting to blind children. From the point of view of safety, the playgrounds connected with most schools for the blind are well supervised but very few attempt to supervise constructively the play activities of the children.

It is in the field of constructive play activities that the day school classes for the blind meet with one of their most difficult problems. The overcrowded and ill-adapted playgrounds, both at school and in the home neighborhood, are not conducive to the free and spontaneous physical activity which characterizes those residential schools that have given most attention to this subject. Day school authorities who thoroughly appreciate this difficulty have met the situation in a measure by arranging for after school gymnasium, swimming and dancing classes, boy scout hikes, and similar activities.

In the field of dietetics, schools for the blind do not differ from other institutional schools. The same variation is apparent in quality of food served to both pupils and faculty and in the attention given to correct balance in the meals.

*Educational Provisions and Their Adequacy**Compulsory*

Taking the country as a whole, state compulsory school laws seem to give as adequate statutory assurance of an education to blind children as to those who see. Ten states (Alabama, Florida, Kentucky, Louisiana, Maine, Missouri, Nevada, New Hampshire, South Carolina, Wyoming) do not have compulsory education laws covering blind children.* Five of these have state schools for the blind. Even in the states having neither a compulsory education law nor state schools the indications are that the state provides well for the education of its children who cannot see.

There has been, however, a great deal of difficulty in enforcing the compulsory school laws with blind children. Often this is due to the lack of appreciation of the value of an education to a blind child and to a reluctance on the part of local officials to compel a blind child to leave his family to attend a distant residential school. In communities where a day school class for the blind is in operation, enforcement of compulsory school attendance is less difficult.

In some of the southern states, where compulsory education is enforced with blind white children, little attempt seems to have been made to enforce the law with blind Negro children. There is, however, a growing tendency toward improving the educational facilities for the colored blind. Recently the State of Mississippi opened a class for blind pupils in the Piney Woods Country Life School for the colored, a privately supported institution for colored youth with sight. In 1926, West Virginia opened a school for the colored deaf and the colored blind. So far as is known, however, no braille class has been established for colored children exclusively, although in the North many such children are included in the membership of present classes.

* A compulsory school law applying to blind children went into effect in Alabama, September 1, 1932.

One possible reason for laxity in the enforcement of compulsory school laws for either white or colored blind children is that in a number of states the residential schools for the blind are already so overcrowded that a thoroughgoing enforcement would bring about a state of congestion which would seriously handicap educational work. The establishment of braille day school classes in a number of large cities now without them and an increased enrolment in a few of the braille class departments now in existence may go far toward relieving the strain on the residential schools and toward making possible an education for more blind children. This should not be done, however, unless the public school authorities are prepared to finance the day school classes adequately.

Preschool and Home Training

Existing provisions for blind children of preschool age are far from adequate. Improper training or actual lack of any training for the blind child of this age almost inevitably develops peculiarities which, as he grows up, tend to isolate him from other people of his own age. Yet no research work has been done with preschool blind children on which to base an adequate general program to serve as a guide to parents and guardians in their extremely difficult problem of keeping the blind baby normal.

More attention has been given to this preschool work in Cleveland than anywhere else. The following paragraph is quoted from a letter received from Harriet Totman, visiting teacher for blind children in that city.

The kind of home training furnished by the visiting teacher is not of the nature of school subjects nor should I call it as complex as handwork. We aim to assist in the development of the simple achievements of the normal child: that is, dressing and undressing self, including toilet care; feeding self; climbing up and down stairs; going about the house unaided; running freely in open spaces; jumping; ability to handle toys, such as building blocks, wooden beads, dolls, sometimes nail hammering, and so forth; an understanding of or acquaintance with as many things as possible in his physical environment. A

very important part of the training is to prevent unwholesome and maudlin indulgence on the parents' part, to secure more satisfactory and constructive discipline, and to build up in both parents and child a better attitude toward his handicap.

This teacher suggests that there should be more publicity regarding training opportunities of preschool blind children and that a more complete and accurate census of visually handicapped preschool children is needed.

Although a number of agencies for the blind make some effort to influence the training of blind babies, very few have any organized program of procedure. When blind babies come to their attention they offer what suggestions they can and then hope for the best. The literature on the subject, which a few agencies give to parents and guardians, contains little of special value. Probably the best now obtainable is a pamphlet, *Hints to the Mother of a Blind Child*, by Amy K. Halfpenny.

In order to meet in some degree the need for more satisfactory literature the American Foundation for the Blind, is beginning the preparation of pamphlets for distribution to parents, teachers, doctors, public health nurses, and clinics.

It is impossible to know how many sightless preschool children there are who should have special training if they are to grow up as normally adjusted children. Although we have given 798 as the total number five years and under, there is reason to believe that there are many others.

With the exception of crippled blind children, a few of whom are to be found in institutions for cripples or in homes for the blind, so far as is known, practically nothing is being done for the doubly handicapped preschool child.

In the United States there are 4 privately supported nurseries for blind babies: Boston Nursery for Blind Babies, Boston; Nursery for the Blind, Farmington, Connecticut; Dyker Heights Home for Blind Children, Brooklyn, New York; Arthur Sunshine Home and Kindergarten for Blind Babies, Summit, New Jersey.

Three of these are within 130 miles of each other. At

the present time these nurseries, together with the Brooklyn Home for Blind, Crippled, and Defective Children, Brooklyn, New York, are taking care of 95 children of whom only 51 are strictly of preschool age.*

Since no record is available regarding the cost of running these nurseries, it is impossible to give an idea as to the relative costs for training such children in their own homes or in residential nurseries.

The lower age limit in all nurseries is approximately two years, but only one nursery is without children over preschool age. The upper age limit in one nursery is ten years and in two others, fifteen. The Brooklyn Home for Blind, Crippled, and Defective Children also has blind children up to the age of fifteen, but this is because the children continue there for their elementary school training. Three nurseries are keeping children beyond the nursery stage, because there seems to be no other place to send those who have unusually poor motor control or who need other specialized forms of training before they are qualified to mix with normal children of their own age. Sometimes, also, an older child is sent to one of the nurseries to remain until its mental status can be definitely determined. The only nursery which does not include children beyond preschool age gives no kindergarten training, because this is provided in the school for the blind of that state.

No figures are available on the most prevalent causes of blindness among preschool children, but there seems to be no doubt that venereal diseases are responsible for a large percentage.

The number of nurses, attendants and teachers on the staff of one of the nurseries is not known. Of the others, however, including the Brooklyn Home, the number of staff members are respectively: 4, 5, 6 and 7. These figures in-

* It has now been found that The Catholic Institute for the Blind, New York City, takes children at three years of age. The Dyker Heights Home now provides a home for needy children who are attending public school classes for the blind in Brooklyn, New York.

clude neither visiting doctors nor other kinds of occasional service; neither do they include servants. The majority of the staff members are nurses and nurses' helpers. Each nursery, however, employs at least one teacher on its staff.

The New York Association for the Blind has recently started a class in which, although it is primarily a kindergarten, each child is given the special training for which he stands in most need. The teacher of the class also instructs the parents on how to train small blind children in self-reliance, and to care for their own personal needs. This year it has 5 children whose ages are five, five, six, seven, and ten respectively.

According to data on file in the office of the American Foundation for the Blind, there are 13 states which provide state aid for blind babies and 30 states which make no such provision. Of the other 5 states there is no record.

For the most part, existing legislation simply authorizes the payment of board and tuition fees for blind babies in some special institution in the United States designed for this purpose. Usually these laws have been passed as the result of the efforts of the International Sunshine Society.

Since no careful survey has ever been made by a well qualified investigator, it is difficult to judge the adequacy of nurseries for blind babies. It is easy to assert that no blind baby will be normal unless he is sent to a blind babies' nursery; it is equally easy to insist that every blind baby must be brought up in his own home if he is to be like other children. Both statements are made and neither can be successfully refuted because no one has yet ascertained the facts in the case. There seems to be no doubt that the nurseries are performing a valuable service in caring for and training those children of preschool age who cannot be brought under the proper sort of guidance usually afforded by a visiting teacher. Whether most blind children would not be better off in their own homes if the state and local communities financed visiting teachers is a question which merits our unprejudiced attention.

Residential Schools

General Information. Table 4 is a record of the pupil population of residential classes for blind children in the United States.

TABLE 4

PUPIL POPULATION OF RESIDENTIAL SCHOOL CLASSES FOR BLIND CHILDREN
IN THE UNITED STATES ^a

RESIDENTIAL SCHOOLS

Schools	Pupil population
Alabama School for the Blind, Talladega.....	150
Alabama School for the Negro Deaf and Blind, Talladega.....	36
Arizona School for the Blind, Tucson.....	17 ^b
Arkansas School for the Blind, Little Rock.....	120
Arkansas School for the Colored Blind, Little Rock.....	28
California School for the Blind, Berkeley.....	106
Colorado School for the Deaf and Blind, Colorado Springs.....	64
Connecticut School for the Blind, Hartford.....	60
Florida School for the Deaf and Blind, St. Augustine.....	57
Florida School for the Colored Deaf and Blind, St. Augustine.....	16
Georgia Academy for the Blind, Macon.....	} 117 ^b
Georgia Academy for the Blind, Colored Department, Macon.....	
Idaho School for the Deaf and Blind, Gooding.....	20
Illinois School for the Blind, Jacksonville.....	241
Indiana School for the Blind, Indianapolis.....	153
Iowa School for the Blind, Vinton.....	140
Kansas School for the Blind, Kansas City.....	127
Kentucky School for the Blind, Louisville.....	} 99
Kentucky School for the Blind, Colored Department, Louisville....	
Louisiana School for the Blind, Baton Rouge.....	80
Louisiana School for the Negro Blind, Scotlandville.....	33
Maryland School for the Blind, Overlea.....	83
Maryland School for the Colored Blind and Deaf Mutes, Overlea...	27 ^b
Massachusetts—Perkins Institution and Mass. School for the Blind, Watertown.....	273
Michigan School for the Blind, Lansing.....	175
Minnesota School for the Blind, Faribault.....	90
Mississippi School for the Blind, Jackson.....	72
Mississippi—Country Life School for the Colored, Department for the Blind, Piney Woods.....	10
Missouri School for the Blind, St. Louis.....	98
Montana School for the Deaf and Blind, Boulder.....	21
Nebraska School for the Blind, Nebraska City.....	51
New Mexico Institute for the Blind, Alamagordo.....	99
New York State School for the Blind, Batavia.....	169
New York Institute for the Education of the Blind, New York City.	142
North Carolina School for the Blind and Deaf, Raleigh.....	233
North Carolina School for the Colored Blind and Deaf, Raleigh....	82
North Dakota School for the Blind, Bathgate.....	34
Ohio School for the Blind, Columbus.....	288
Oklahoma School for the Blind, Muskogee.....	131 ^b

TABLE 4 (Cont.)

Schools	Pupil population
Oklahoma Institute for Colored Deaf, Blind and Orphans, Taft....	9 ^b
Oregon School for the Blind, Salem.....	45
Pennsylvania Institute for the Instruction of the Blind, Overbrook.	243
Pennsylvania—Western Pennsylvania School for the Blind, Pitts- burgh.....	152
South Carolina School for the Deaf and Blind, Cedar Spring.....	104
South Carolina School for the Deaf and Blind, Colored Department Cedar Spring.....	
South Dakota School for the Blind, Gary.....	45
Tennessee School for the Blind, Nashville.....	174
Tennessee School for the Blind, Colored Department, Nashville....	37
Texas School for the Blind, Austin.....	217
Texas Institute for the Deaf and Dumb and Blind Colored Youth, Austin.....	97 ^b
Utah School for the Deaf and Blind, Ogden.....	29
Virginia School for the Deaf and Blind, Staunton.....	73
Virginia School for the Colored Deaf and Blind, Newport News....	26 ^b
Washington School for the Blind, Vancouver.....	84
West Virginia School for the Deaf and Blind, Romney.....	117
West Virginia School for the Colored Deaf and Blind, Institute....	17
Wisconsin School for the Blind, Janesville.....	137
<i>Total, 57 schools.....</i>	5,288

SPECIAL RESIDENTIAL SCHOOLS

New Jersey—St. Joseph's School for the Blind, Jersey City.....	55
New York—Catholic Institute for the Blind, New York City.....	35
Pennsylvania—St. Mary's Institute for the Blind, Lansdale.....	18
Pennsylvania—Royer-Greaves School for the Blind, King-of- Prussia.....	19
<i>Total, 4 schools.....</i>	127
<i>Grand Total, 61 schools.....</i>	5,415

^a From replies to questionnaire sent to schools by the Subcommittee on the Visually Handicapped, March, 1930.

^b From the 1929 *Report of the American Printing House for the Blind*, Louisville, Kentucky, p. 21.

One of the 4 schools listed as special residential schools, the Royer-Greaves School for the Blind, takes only definitely backward blind children. Seven of the remaining 57 are private schools supported by endowments, tuition fees, state grants and special gifts, although each receives some state help. These schools are: Connecticut School for the Blind, Hartford; Maryland School for the Blind, Overlea, Baltimore; Maryland School for the Colored Blind and Deaf Mutes, Overlea, Baltimore; New York Institute for the Education of the Blind, New York City; Pennsylvania Institution for the Instruction of the Blind, Overbrook, Philadelphia; Perkins Institution and Massachusetts School for

the Blind, Watertown; Western Pennsylvania School for the Blind, Pittsburgh. These are usually listed with the state schools since they take the place of such institutions in their respective states. For the sake of convenience they will, therefore, be referred to hereafter as state schools.

Nineteen of the state schools are still dual in character, that is, they have departments for both the deaf and the blind. Of these institutions, 10 are for white and 9 for colored children.

In those states having dual schools (deaf and blind) separate plants should be provided for the two departments in order that the education of one group of children may not interfere with that of the other. Although the need for separate schools is so clearly recognized that there seems to be no doubt of the ultimate disappearance of the dual schools, the change is taking place very slowly. Definite arrangements have been made for the division within a few years of the Virginia institution into two separate schools.

Ten of the 57 schools are really departments for the colored under the same superintendent as the schools for white children in those states. They are listed separately for two reasons: (1) unless they are so listed they are likely to be overlooked; (2) the schools for the white and the colored are often so different in the character of their pupil and teacher personnel, in educational status, and so forth, that no generalizations can be made which will adequately cover both of them.

In the northern states the Negro children attend the same schools as white children, and no distinction has ever been made. Educational provisions for the colored blind in the southern states are apparently still inadequate, both in number of pupils served and in the educational standards obtaining in the schools. Without a careful survey it is not possible to speak with certainty on this point.

Pupil Cost. The cost of educating blind children varies widely. A handful of schools have sufficient financial resources to provide amply for the physical well-being of all their pupils; the greater number, however, are so limited

financially, that it is difficult for them to do more than preserve the status quo. This applies not only to the maintenance of the physical plant, but also to the replacement of educational apparatus, the employment of teachers, the provision of medical care, and other important items. Both the lowest figure, \$285 for each pupil, and the highest, \$1,575, are based on attendance. The average cost is \$628 and the median, \$583. Most of the 43 schools submitting information upon this subject indicated that their figures included all expenses of any sort, but the school with the highest pupil cost states that new construction is not included. The highest costs are for schools located in metropolitan areas in which living expenses are high.

Expensive apparatus and special procedure such as that found in the best private schools for the seeing is required to educate blind children as they should be educated. Athletic fields, swimming pools, skating rinks may seem to be expensive non-essentials, but for blind children they provided the best and safest means for constructive physical education. And upon adequate physical education the success of blind children is peculiarly dependent. It is difficult to believe that schools with a per capita cost below \$600 can give their pupils the well rounded training they should have.

Administration and Finance. Since the function of the school is educational, it is a matter of some importance that residential schools for the blind be placed under state departments of education. In the past it has been common practice in most states to place schools for the blind under the state board of charities. In recent years, through the efforts of educators of the blind and of the blind people themselves, in many states, schools for the blind have been transferred to the state board of education. By thus classifying the school as an educational institution it is much more likely to receive adequate support and a greater appreciation of its educational character. Since the few private schools are all directed by some type of local board, they are not considered here. However, whatever state control is given to these schools comes from the state departments of education.

Twenty-eight of the 32 schools from which information regarding the source of their support was received, are financed almost exclusively by state appropriations. Although 7 private schools which take the place of state institutions are partially financed through endowments and special gifts, most of them are supported largely by state grants and state paid tuition fees.*

Requirements for Admission. Generally speaking, requirements for admission to residential schools for the blind are not satisfactory.

In 19 schools, admission of the pupil is apparently entirely dependent upon the judgment of the executive head of the school

In 11 institutions, other agencies must join with the executive head in passing upon the advisability of admitting any particular pupil

In 4 schools, students are admitted upon the decision of the state board of education

In 5 schools, admission is granted only upon recommendation of the governing board of the school

In 3 schools, all that is necessary is the recommendation of an oculist

In 10 schools, children may be admitted upon recommendation of any two or three persons or boards.

In actual practice, however, admission is usually possible only after recommendation by both the executive head of the school and a duly accredited oculist.

Children should never be admitted to residential schools for the blind without the recommendation of the superintendent, but his recommendation alone is not sufficient unless he can afford, and is wise enough to obtain, the advice of specialists in mental and physical health. At present eye conditions are too often carelessly diagnosed and limited intelligence mistaken for low vision. Often it may be advisable to admit a child tentatively for a further study of his case,

* Information obtained from members of the Subcommittee and from a questionnaire sent out by the Ohio Department of Education in January, 1930.

but the child should not be finally admitted until his case has been passed on by the superintendent of the school, an accredited and interested ophthalmologist, a recognized specialist on the secondary handicaps when additional disabilities are present, and a psychologist accustomed to testing visually handicapped people.

Pupil Population. Table 5, which gives the comparison

TABLE 5

COMPARISON BETWEEN ENROLMENT DISTRIBUTIONS OF BLIND AND SEEING PUPILS, BY GRADES

Grades	Blind pupils ^a		Seeing pupils ^b	
	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>
I through IV.....	1,127	40.5	12,282,028	50.2
V " VIII.....	986	35.4	8,290,899	33.8
IX " XII.....	672	24.1	3,911,279	16.0
<i>Total</i>	2,785	100.0	24,484,206	100.0

^a Figures compiled from data secured from 22 residential schools for the blind in a questionnaire sent out by the State Department of Education of Ohio, January, 1930.

^b "Statistics of State School Systems, 1927-1929," *U. S. Dept. of Education Bulletin* No. 5, 1930, p. 24.

between enrolment distribution of blind and seeing pupils by grades reveals rather interesting differences. One of the most probable explanations of the large percentage of blind pupils in the upper grades is that blind children, not being considered economic assets, are not expected to leave school early in order to eke out the family income, and consequently are allowed to complete their elementary and high school courses proportionally more often than seeing children. A second factor that enters into figures for pupil population among the blind is that some children who lose their sight after their school courses have begun are transferred to schools for the blind when they are already in the upper grades or even in high school, and that these later admissions may more than offset the number of children who have to be dropped from the school because of low mentality. These are, however, merely surmises.

The figures appearing in Table 6 on average ages and age ranges by grades for both blind and seeing pupils give rise to many questions. When average ages alone are con-

TABLE 6

AVERAGE AGES AND AGE RANGES, BY GRADES, FOR BLIND AND SEEING PUPILS

Grades	AVERAGE AGES				AGE RANGES	
	Blind ^a pupils		Seeing ^b pupils		Blind ^a pupils	Seeing ^b pupils
	Years	Months	Years	Months	Years	Years
I	8	8	6	3	5 to 20	5½ to 7
II	10	3	7	3	7 to 25	6½ to 8
III	11	3	8	3	8 to 25	7½ to 9
IV	12	9	9	3	9 to 25	8½ to 10
V	13	7	10	3	10 to 25	9½ to 11
VI	14	8	11	3	11 to 21	10½ to 12
VII	15	7	12	3	12 to 22	11½ to 13
VIII	15	3	13	3	13 to 28	12½ to 14
IX	17	8			13 to 38	
X	18	7			13 to 27	
XI	19	1			13 to 26	
XII	20	6			13 to 20	

^a Data furnished by 17 schools for the blind.^b *Adjustment of a School to Individual and Community Needs*, by P. A. Boyer. University of Pennsylvania, Philadelphia, 1920, p. 58.

sidered, it appears that even though blind children within a given grade are about three years older than seeing pupils they progress at a fairly even rate from the first grade through high school. Reference to the age ranges listed in this table raises some doubt of the value of the figures for averages. As a matter of fact, in the majority of schools from which reports were received the age ranges within any given grade are extreme. In the high school there may be ample excuse for admitting students who are markedly over age when these pupils are young men and women who have for some reason or other been denied the opportunity of receiving secondary school education yet who are mentally qualified for such study. If the unusually high ages at the upper limit of the ranges of the high school grades represent pupils who are not qualified for such work by nature but who have been pushed and pulled along by well meaning teachers and by their own ambition, it is very doubtful if the school is doing them the kindness which it intended.

In the lower grades, however, it is deemed inadvisable to associate in one class both normal children of seven or

eight years and other children of sixteen or seventeen. Two such pupils may easily be ready for the same lesson at the same time, but their mental attitude toward these lessons, the quality of their results, and the speed with which they pass on to other lessons is very different. Certain questions arise. Are some of these physically adult primary students feeble-minded or are they new entrants who are mentally normal but illiterate? Is such an extreme range of ages the result of serious overcrowding of the schools, or of a too rigid grade system, or of both? Even if these over-age primary and elementary grade students are not mentally deficient they should be taught separately from the younger children in the same grade, and should not be associated with them on the playground and in their living quarters. In a few schools the age ranges within each grade are cut down almost to those which are normal for seeing children. Probably these schools have been more successful in obtaining cooperation from the state schools for the feeble-minded than the others.

One problem disturbing the peace of mind not only of the teachers but of many so-called *blind* pupils is the well-nigh compelling tendency of the partially seeing child to read braille with his eyes. This is only one of the complications which arise when a child with considerable vision is sent to a school with a curriculum adapted only to the needs of a child without sight. Of the 44 residential schools which reported on this point 673, or 16 per cent, of all their pupils have sufficient vision to permit their reading ink print; 982, or 23.4 per cent, have lesser degrees of vision; only 2,540 out of the 4,195 children reported are either totally without sight or with light and color vision only. Three schools report special sight-saving classes for pupils of sufficient vision, and 18 schools allow such children to use large type books when the right text can be found. The importance of the problem presented by these partially seeing children in residential schools for the blind is not always recognized. The only valid excuse for allowing children in schools for the blind who have enough vision to per-

mit them to work later as seeing people is the inability of the state to provide an adequate education for them in their home communities.

The answers to a questionnaire sent out by the American Foundation for the Blind early in 1930, show that out of 42 reporting schools, including colored schools and departments, 37 give a full high school course. Four others give part of the high school course and then send their pupils to a public high school for two or three years. In the formulation of future policies with regard to higher education, the number of blind students graduating from high school must be considered also. Figures were returned to the questionnaire by 42 residential schools, including the colored schools and colored departments. The answers for the white schools probably include a number of Negroes. Table 7 gives the figures for graduates of these schools.

TABLE 7

NUMBER OF BLIND STUDENTS GRADUATING FROM HIGH SCHOOLS

	1929	Five year period 1925-1929, inclusive
White schools.....	159	738
Colored schools.....	12	39
<i>Total.....</i>	<i>171</i>	<i>777</i>

Of this number 313 continued their studies: 196 went to college, 74 to vocational or industrial schools, and 43 to other special schools or courses.

Very few schools seem to make special provisions for subnormal or superior children. Four schools report the establishment of special classes for the feeble-minded. So far as can be learned there are no classes for the mentally superior. Probably the chief reason for this is that such a classification tends to increase the expense of administration for institutions which are already lacking in funds. Such a classification within an institution also calls for exceeding care and tact in its management if it is not to react unfavorably on the social life of the children. In order to meet both of these difficulties a few schools are experimenting with schemes similar to the Dalton Laboratory Plan.

Personnel. It is believed that in the United States as a

whole many superior educators, both executives and teachers, have been attracted to this specialized field. Nevertheless, there is room for improvement in many schools where, owing to mediocre administration, one or more departments of the school are not maintained at a high standard and where the effect of good teaching in one grade is often lost because of the poor teaching which follows. In residential schools, both state and private, too often teachers are retained out of sympathy for them without proper consideration for the welfare of the pupils. Although this situation cannot always be avoided even in the best schools, probably its occurrence will be considerably reduced when the best teachers are available for blind children. Personality, teaching ability and originality should all be considered.

The qualifications of a successful superintendent include considerable educational background, at least average executive ability, superior character, and often considerable political acumen. Superintendents' salaries range from less than \$2,000 to somewhat over \$7,000 a year; the majority lie between \$2,000 and \$3,000. Present information indicates that in addition to his salary, a home is always provided for the superintendent and his family. Most schools also include board, laundry, and the use of an automobile.

No figures are available indicating the number of college graduates among the superintendents, but more than half of them are graduates of institutions of higher learning or have an equivalent educational background.

At the present time there are only three blind superintendents and two partially seeing ones. Boards of managers are naturally reluctant to employ a blind man as superintendent of a school for the blind. This is due to the tendency of the public to exaggerate the limiting effects of blindness. Since there is always a certain amount of uncertainty in selecting anyone for an important position the board of managers follow the line of least resistance, selecting a seeing person, even though they may be morally certain that in some respects he is inferior to the blind candidates for the post. Since, in the last analysis, the board is responsible to the general public the members feel that less censure will be

visited upon them in the selection of an unsatisfactory seeing man than in the election of an unsatisfactory blind man.

If, however, the organizations for the blind are genuinely sincere in their professed faith in the capacity of blind people to fill responsible places, they should seriously consider the advisability of electing superior blind persons to the position of superintendent of a school for the blind when such a candidate is available. The honor roll of outstanding educators of the blind in the history of this work indicates that the precedent for following this course is a good one.

The importance of the position of head teacher or principal varies not only according to the amount of direct supervision given to the educational phase of the work by the superintendent but also according to the calibre of person the superintendent is able to procure for the salary which he can pay. Although judging from an analogy with other branches of the educational field the principalship should afford an excellent training ground for the superintendency, few principals are chosen as superintendents; boards of managers usually select the superintendent entirely outside of work for the blind. If this condition remains unchanged the best men and women will be unwilling to remain as principals in schools for the blind, and institutions will continue to lose the advantage of having thoroughly trained men ready to assume the helm when death or some other exigency causes a vacancy in this important position.

The duties of principal teachers are ill-defined and the requirements for their training are vague. Although a large number of these principals are not only college graduates but have done or are doing advanced work, there are few instances in which the salaries are sufficient to hold those whose contributions are the most valuable. In most cases salaries quoted for head teachers are additional to living, but usually where salaries are \$3,000 or over, living is not furnished. Thirty-two per cent of the head teachers receive from \$1,200 to \$1,600 a year; another 23 per cent are getting from \$1,600 to \$2,200; 25 per cent are receiving less than \$1,200 a year and living, for their services.

Although the number of teachers to a school shows a definite correlation with the size of the school, the amount of training received by these teachers reveals no such relation. Judging from available data and from knowledge, the percentage of teachers who have continued studying after high school is correlated more closely with the salary status of the school than with anything else. At present a mere handful of teachers have less than a high school diploma or its equivalent, and practically all of these are part-time teachers.

The schools for the blind have not yet risen to the educational level of demanding prepreparation. Only 9 schools report that they require teachers to have special training in the education of the blind either before or after the assumption of their duties. Six institutions say that although teachers are not required to take such training, they are strongly urged to do so. However, a few teachers have obtained leave of absence in order to take the course on the history of the education of the blind given by the Harvard Graduate School of Education and the course on special methods in education of the blind given by Perkins Institution and Massachusetts School for the Blind, Watertown. Many have also availed themselves of the courses usually given by the George Peabody College Summer School in Nashville, Tennessee. In a number of instances teachers' salaries have been raised in recognition of their having taken this extra work, but more often the teacher has entered upon her duties with no reward in sight other than her own increased interest in her work.

Beginning with the year 1931 the State of California will require special training for its teachers of handicapped children. In order to help meet these requirements the University of California, beginning with the school year 1930-1931, introduced a two unit course on Administration and Methods of Teaching the Blind. This course will probably be alternated with a course for teachers of sight saving classes.

The only figures which can be given at the present time

regarding salaries for teachers in schools for the blind are those obtained by the Ohio Department of Education in the questionnaire sent by them to residential schools for the blind during January, 1930. On the basis of answers from 22 schools, it is estimated that the average salary is between \$950 and \$1,000, with living. A median low salary figure for 26 reporting schools is \$675. There is at present no available information concerning the relation between size of salary, years of training, years of experience, and subject taught.

One point upon which there is now no information, but about which there is usually considerable discussion on the part of teachers, is the amount of extra duty required from the teaching staff. Such duties include reading hour duty, evening study supervision, meal time duties, and occasional Sunday supervisory duty.

Schools which can pay good, although not necessarily high, salaries and which do not make unreasonable extracurricular demands on their faculty can obtain high grade teachers; and schools which are not driven to the employment of inferior teachers because of lack of money are not likely to become burdened with teachers whom the superintendent is reluctant to drop because of their inability to find positions elsewhere.

Although nothing has been done to evaluate the effectiveness of kindergarten training for blind children, the present methods of training seeing children offer many suggestions which are so directly applicable to blind children that the invention of new methods is probably not so urgent as at other points in the curriculum. The chief problem here seems to be that of finding a teacher possessed of sufficient resourcefulness to adapt the usual methods to individual blind pupils.

Kindergarten training is given in at least 18 residential schools, and 25 more schools combine kindergarten and first grade work, usually requiring a minimum of two years. Further investigation is required to determine whether the children attending schools which coordinate kindergarten with first grade work are receiving satisfactory preparation.

Whether schools afford adequate prevocational or vocational training depends upon the point of view of the observer. The courses appearing in most schools for the blind which have particular significance from the point of view of vocational training are:

Preprofessional. Music—piano, organ, instrumental and vocal; precollege literary courses

Vocational. Piano tuning, typewriting

Manual and Industrial Training. Carpentry, cooking, sewing, knitting, basketry, chair seating—cane, rush, pith—brush and mop making, broom making, rug weaving, mattress making

The following courses are given by one or a few schools for the blind:

Professional. Insurance and magazine selling, music teaching

Vocational. Braille shorthand, dictaphone operation, domestic science—mother's helpers and light housework—commercial arithmetic and business procedure, poultry raising.

Social Training. There are very few schools which do not make an effort to give their pupils social training in the way of actual experience. Opportunities for such training are offered within the school through the medium of dances, musicales, athletic contests, and so forth, to which the seeing public is invited. These functions are under more or less strict faculty supervision, the degree of which, as distinguished from cooperation, varies from almost none to such close control that the extracurricular activities take on the seriousness of regular school work. In addition to social life arranged for the pupils within the school there is a growing tendency on the part of the schools to make use of every opportunity for including blind pupils in social affairs in the community at large. Most of these contacts are made through the churches, a majority of schools reporting the attendance of their students at church social affairs. There

seems, however, to be no definite program for making sure that the pupils actually mingle with the seeing people attending these gatherings. In view of the difficulty met with by blind persons in participating in the social life of the community, authorities of schools for the blind should consider carefully ways and means of giving their pupils more opportunity to mingle socially with seeing people of their own age than is now the case.

Of late years there has been a growing tendency toward interschool competitions for the sake of stimulating broader interests among the pupils.

The interschool spelling contests have aroused keen interest. Both boys and girls are entered in these meets, representatives of each school being selected after long practice in a series of local spelling matches. Six of the schools in the eastern section of the United States have so far taken part in this contest.

To bring about normal social life with seeing people for the many blind children whose personalities may have been warped during the preschool age, is a difficult task calling for training, tact, and sympathy on the part of those faced with the problem. Few blind children find social adjustment as easy as do those who see. Improved preschool training, better courses in physical training during school life, and the extension of the scout and other outdoor and indoor group activities will do much to make the blind boy or girl socially acceptable. It still remains for someone to find opportunities for the mingling of blind students with other boys and girls of their own age. Parents and friends of the children will also need to be taught how to treat them as normal members of the family and community.

Braille Day School Classes

General Information. At least 8 states encourage the establishment of day school classes for the blind by allowing state subsidies to cities in which such classes are reported. This takes one of several forms: paying part of the teachers'

salaries; allowing a certain specified grant for each class; making a certain fixed annual per capita allowance; paying the excess cost of training a blind child over that of instructing a seeing child. Such state aid is usually coupled with some form of state supervision. This concerns itself largely with seeing that cities comply with certain specified standards in regard to qualifications of teachers, physical equipment of classrooms, salary schedules, and so forth.

Table 8 is a record of the day school classes for blind children in the United States.

TABLE 8

PUPIL POPULATION OF DAY SCHOOL CLASSES FOR BLIND CHILDREN IN THE UNITED STATES ^a

Day school classes	Number of pupils
California, Los Angeles..... Classes for the blind.....	40
Georgia, Atlanta..... Department for the blind.....	6
Illinois, Chicago..... Classes for the blind.....	68
Louisiana, New Orleans.... Department for the blind.....	8 ^b
Michigan, Detroit..... Classes for the blind.....	43
Minnesota, Duluth..... Department for the blind—no braille classes at the present time.....	2
Minnesota, Minneapolis.... Classes for the blind.....	23
Minnesota, St. Cloud..... Class for the blind.....	7
Minnesota, St. Paul..... Department for the blind—no braille classes at the present time.....	2
New Jersey, Jersey City.... Department for the blind.....	10
New Jersey, Newark..... Classes for the blind.....	17
New Jersey, Paterson..... Department for the blind.....	14
New York, Buffalo..... Classes for the blind.....	5
New York, New York City. Classes for the blind.....	90
Ohio, Cincinnati..... Department for the blind.....	11 ^b
Ohio, Cleveland..... Classes for the blind.....	30
Ohio, Toledo..... Department for the blind.....	8
Ohio, Youngstown..... Classes for the blind.....	12
Pennsylvania, Johnstown... Department for the blind.....	17
Washington, Seattle..... Department for the blind—no braille classes at the present time.....	3 ^b
Wisconsin, Milwaukee..... Department for the blind.....	7
<i>Total</i> 21 cities.....	423

^a From replies to a questionnaire sent to schools and classes by the Subcommittee on the Visually Handicapped, March, 1930.

^b From the *Report of the American Printing House for the Blind*, Louisville, Kentucky, 1929, p. 21.

NOTE: Since 1930 classes for the blind have been established in Long Beach, California, Grand Rapids, Michigan, Elizabeth, New Jersey.

Twenty-one cities have made legal provision for the establishment of braille day school classes. Three of them,

however, have none at the present time, although 7 blind children are being cared for in their school systems. In the remaining 18 cities there are 416 blind children attending public school. The establishment of really adequate braille day school class departments in most of the large cities would be an inestimable boon to many blind children. Attendance in such classes results in the association of the blind child with seeing children of his own age in class work, in club meetings, and, to a certain extent, on the playground.

TABLE 9

BRAILLE CLASSES, THEIR PERSONNEL AND RESPECTIVE CITY POPULATIONS

Cities	Popula- tion ^b	Classes ^a	Full- time teachers	Part- time teachers	Pupils enrolled December 1, 1929
St. Cloud, Minn.	15,873	1	1	0	7
Johnstown, Pa.	67,327	1	1	1	17
Duluth, Minn.	98,917	No braille class at present time; children in sight-saving class.			2
Youngstown, Ohio.	132,358	1	1	1	12
Paterson, N. J.	135,875	1	1	..	14
Atlanta, Ga.	200,616	1	1	1	6
St. Paul, Minn.	234,898	No braille class at present time; children in sight-saving class.			2
Toledo, Ohio	243,164	..	1	1	8
Jersey City, N. J.	298,103	1	1	0	10
Seattle, Wash.	315,312	No braille class at present time; children in sight-saving class.			3 ^c
Minneapolis, Minn.	380,582	3	2	4	23
New Orleans, La	387,219	..	..	..	8 ^c
Cincinnati, Ohio	401,247	..	..	..	11 ^c
Newark, N. J.	414,524	3	2	2	17
Milwaukee, Wis.	457,147	1	1	..	7
Buffalo, N. Y.	506,775	1	1	..	5
Los Angeles	576,673	7	8	0	40
Cleveland, Ohio	796,841	3	3	5	30
Detroit, Mich.	993,678	5	6	1	43
Chicago	2,701,705	6	6	..	68
New York City	5,620,048	..	..	..	90
<i>Total</i>		21 cities			423 pupils

^a From Subcommittee's questionnaire to day school classes for the blind.

^b From 1930 *World Almanac*, pp. 392-397, based on 1920 Census.

^c From the *Report of the American Printing House for the Blind*, Louisville, Kentucky, 1929, p. 21.

No explanation is attempted concerning the lack of relation between the size of the city and figures given in the other columns appearing in Table 9, but many questions arise to which an answer will be welcome. A study of the table shows

clearly that the number of braille classes, number of pupils enrolled, and the number of teachers supplied for these classes are not closely related to the size of the general population of the cities in which they are located.

Pupil Cost. Available figures indicate wide variations in the pupil cost in the different braille day school class departments. Although the range appears to be from approximately \$120 to \$590 a child, most of the figures range between \$200 and \$300. Since the amount of overhead expense included in these figures is not clear, they should be taken as indicative rather than as accurate data. Although costs for blind pupils in the public schools may vary widely from city to city, they never reach the high figures which hold for many of the residential schools, since the boarding item with its accompanying incidentals is not assumed by the board of education.

Requirements for Admission. These are not uniform throughout the country. It is believed, however, that care should be taken to ascertain, first, that the child is actually blind; second, that he is of normal intelligence; and third, that his health is such that attendance at school is advisable. While occasionally it may be necessary to enrol candidates for admission to braille classes tentatively without thorough examination, little time should be lost before they are passed upon, first, by a competent supervisor; second, by a competent oculist; third, by the school physician; and fourth, by a psychologist experienced in the testing of blind children.*

Pupil Population. According to the information at hand the distribution of blind children in braille day school classes does not follow the usual trend for the regular grades, where more children are to be found in the first three or four grades than in the higher grades. The 15 cities reporting on this question state that there were more pupils in grades IV through VIII than in the grades above or below. One reason for this distribution may be that the membership of the middle grades is increased by children blinded from acci-

* Dr. Samuel P. Hayes' final revision of the Hayes-Binet tests is now ready for distribution.

dents or disease after they have been in school for a few years. Another explanation is that probably a larger percentage of braille class pupils than of seeing pupils graduate from elementary schools. There is also a tendency for the parents of a blind child to move from rural districts and more backward cities into cities having braille day school classes, and this change of residence may not take place until the child's progress through the grades has made special attention imperative.

Even where careful attention is given to the proper placement of each individual child the range of ages within each grade varies widely. Because there are so few pupils within any one grade, a table giving age ranges by grades for the few cities from which we have information would have little significance. Table 10 gives the figures for the age ranges, by grades, over a period of fifteen years as reported by one braille day school class department.

TABLE 10

AGE RANGE AND AVERAGE AGE, BY GRADES, IN ONE BRAILLE CLASS SYSTEM DURING THE LAST FIFTEEN YEARS

Grade	Age range	Average age
Kindergarten	5- 9 ^a	6.5
I	7-10	7.5
II	7-11	8
III	8-11	9
IV	9-12	10.5
V	10-19 ^a	12
VI	11-16	14
VII	12-18	16
VIII	13-18	17
IX	14-17	15
X	15-18	16
XI	16-19	17
XII	17-20	18

^a These are very unusual.

The following paragraphs are quoted from a letter from the supervisor who contributed Table 10:

In order to present conditions that have been experienced, and because of the small number of pupils present in one grade at one time, and also because of the variability in age of these children, we

have taken a period of years, that is, fifteen, selected the youngest and the oldest, and estimated the average age for the grade.

It works out that the pupils whose ages were low for the primary and grammar grades are the pupils who have been able to achieve high school graduation. . . .

The range of I. Q.'s of pupils we receive for training, added to the varying ages at which loss of sight occurred, and the varying length of time between loss of sight and entrance into school, causes considerable irregularity in ages for different grades. The school adjusts itself to individuals.

Since this statement presents the usual situation in braille class departments, it is apparent that teachers in these classes must give a great deal of their time to individual work. No table, however, can adequately picture the difficulties involved in working with so many degrees of chronological and mental age, and with so many different personality problems.

The personality problems which blind children develop differ from those of seeing children only in degree. A blind child with an inferiority complex, or with a feeling of superiority or self-complacence, is much more deeply affected and much more perplexing to deal with than a seeing child because the reasons for his mental attitude are more compelling and the remedies are less accessible.

Most thoughtful supervisors are deeply concerned with the problem of the proper training of those children who now have sufficient vision to do regular sight saving class work, but whose eye condition is precarious, or whose future blindness is definitely predictable so that their later need for a tactual approach to education is certain. Probably, since it is unsafe for them to use their eyes in reading even large type books, they should not be treated as regular sight-saving class pupils. But since they still have enough sight to enable them to receive many and valuable visual impressions, they do not seem to belong in a regular braille day school class where the emphasis on all educational media except visual ones lessens their opportunities for gathering all of the visual concepts possible before they definitely lose their sight.

Further study might well be directed toward a more accurate determination of the relative values of tactual and visual means of education as applied to children of varying degrees of visual acuity and of permanence of vision.

Personnel. Proper supervision is so important to the success of braille day school classes that it would be difficult to overemphasize the need for it. In most cities these classes are placed under the supervisor of braille and sight saving classes. In others they suffer from the nation-wide tendency to place all special classes under one general supervisor. Even though, administratively speaking, this centralization of control may be a step forward, from the supervisory point of view it is not so effective. Quite unconsciously the supervisor tends to give an undue proportion of her time and attention to a particular group in which she is most interested personally. Even where the supervisor has only two closely related groups between which to divide her interest, the result is not always equally beneficial to both. The care and training of blind children is so important and so technical in character that seldom does a general supervisor have the specialized knowledge to equip herself for this responsibility.

Although most supervisors are college graduates and a number have taken additional courses of a professional nature to help them in their work, there seems to be no established policy in regard to training requirements for this group. It would appear that the supervisorship of classes for the visually handicapped would be a position which a blind person with the right personality and the right background in training and experience could fill with notable success. All of the above qualifications plus an unlimited capacity for work are distinctly necessary. Two of the present supervisors are blind men of outstanding ability, who opened the departments in their cities and who have kept them at a high standard of efficiency ever since. A blind supervisor is not only an inspiration to the blind children under his supervision, but a constant object lesson to his colleagues as to what can be accomplished by a person without sight.

Supervisors' salaries appear to be established on the same scale as those of other supervisors in the same school system. Although most of them range between \$3,000 and \$4,000, the upper limit of their range is well above the \$4,000 mark.

The caliber of the teacher chosen to take charge of the braille classroom is as important as that of the supervisor. Only the best teachers are adequate for the task of teaching blind children, and the importance of training and experience should not be minimized. The teacher of a group, the members of which make such diverse demands upon her, also needs not only the tact and the initiative of a diplomat, but the originality of a creative artist. Unlike the teacher of feeble-minded children, the braille class teacher must be ready to meet a variety of emergencies and must always be professionally up-to-date if she is to be alert to the needs of the individuals in her very mixed group. The braille teacher, if there happen to be in her class blind children in each of eight grades and the kindergarten, must be not only familiar with the subjects being taught in each of these grades, but sufficiently well versed in all of them to jump, mentally, from first grade arithmetic to sixth grade history and back to third grade nature study, in one trip down a line of desks. In addition to this she must teach blind beginners how to read and write braille and how to use the special appliances needed in the education of the blind. She must also fulfil many other duties which do not come within the scope of the ordinary teacher's work.

An adequate criterion of the required background for a braille day school class teacher can be set forth only in a general way, but the following may safely be taken as the minimum. In addition to all of the desirable personal attributes already mentioned, the minimum for training beyond high school should be three years, preferably four, at a normal school or teachers' college of high rank. This should be followed by a minimum of six credits in professional courses directly related to the work for the blind. The minimum amount of previous experience should be three years in the

regular grades. It is desirable that such a teacher shall also have the benefit of at least a few months' experience in teaching blind children under direction. Most of the teachers employed in day school classes at the present time have a background of more than these suggested minimum qualifications.

Salaries for teachers of braille day school classes range from slightly above \$1,400 a year to approximately \$3,500, according to term of service and local salary schedules. The number of cities that pay these teachers a differential, and the amount of the extra salary allowances were not obtained; but probably the differentials are very similar to those paid to sight saving class teachers.

Course of Study. Generally speaking, the course of study for the braille day school class child is the same as that prescribed for the seeing children with whom he recites. Only those portions of the program which are strictly dependent on sight such as drawing are omitted. In at least 4 cities blind children have kindergarten training before entering the first grade and in 3 of these they attend the regular kindergarten with seeing children, taking part in all activities as far as possible; 6 others give some work of this kind in conjunction with first grade work. By far the greatest drawback to adequate kindergarten training of blind children lies in the lack of appreciation of the need for it on the part of supervisors and superintendents. Yet children without sight need the advantage of training in motor dexterity and in motor-mental coordination which kindergarten work offers, much more than seeing children.

Certain cities give courses in addition to the regular grade work. Twelve reporting cities give extra training in music to blind pupils showing unusual ability or special interest. Seven cities give extra work in manual training and hand training; 3 in physical training, and 7 in typewriting; but only 3 cities provide all of these extra courses. In one city a special course is given in arithmetic short cuts, designed to help the blind student to do mentally those everyday problems which seeing people jot on paper. Such courses are given in addition to the regular grade work.

Except in so far as the courses just mentioned may be so considered, very few day school classes arrange for courses which are vocational or prevocational in character. In 4 cities pupils are taught chair caning; in one of these 4 a piano tuning course is also given. Courses in basketry and rug weaving are given in 3 cities and sewing in 2. Six cities report that blind children may not attend vocational high schools; 3 others state that although such students may attend, they are not doing so at present.

The adequacy of the courses providing prevocational or vocational training depends somewhat upon the point of view of the observer. In most places the training is thorough but the content of the courses sometimes shows only remote connection with changing business and professional demands. The music courses may be taken as an illustration. Whenever music is taught the courses offered are of high calibre. However, except for the occasional genius whose need may be adequately met by an exclusively classical diet, the musical blind person of average talent who is well qualified to hold a position in a dance orchestra is left without the necessary preparation because the high-grade teachers of music employed for teaching the blind do not include jazz in their approved list of courses.

In at least one school system music has been taught as a social asset or as a means of enabling a blind child to participate in the social and recreational life of the community. Instruction is given on such musical instruments as the clarinet, violin, cello, drums, guitar and mandolin, in order to enable these pupils to take part, on something like an equal footing, with seeing children in such organizations as the school orchestra, high school band, or in local community dance orchestras.

With the music situation in its present condition, music is of doubtful vocational value to most braille students. Chair caning is another illustration; few blind people can make more than a bare living in this occupation.

This discrepancy between training and opportunities is neither entirely the fault of the braille class departments nor of the residential schools. The economic world changes so

rapidly that no one agency for the blind is in a position to give the thought, time, and money necessary to keep up-to-date on vocational possibilities for their students. This is true even for the residential schools having services of vocational advisers and placement agents. Some national organization should be given the necessary financial backing to maintain a continuous survey of vocational possibilities for blind people and to do necessary research. By close cooperation with such an agency the schools and classes might arrange their prevocational and vocational courses and direct their vocational guidance to accord more nearly with the demands of the times. The American Foundation for the Blind is attempting this on a small scale but cannot, for financial reasons, extend its work as it feels it should.

Blind pupils who are preparing for college attend the same classes as seeing college preparatory pupils. A few cities furnish special tutors or readers to assist such high school pupils.

An investigation, made at the beginning of 1930, by the American Foundation for the Blind, disclosed the fact that during the last five years 852 blind people have graduated from high school. Of this number 75 were students in braille day school class departments. In every city supporting braille classes blind children are given the opportunity to take the full high school course, usually substituting some literary course for the required science course. In only one or two instances is a special braille class provided for blind high school students since even in some of the larger cities it is deemed more advantageous to provide individual assistance to blind high school students than to gather them into a special class or center. Given the services of a good reader the blind boy or girl can, in most subjects, fit into the regular class for seeing students with little need for special attention. Extra assistance in foreign language work or in mathematics is often supplied by special teachers employed by the board of education on an hourly basis. Such service is usually rendered outside of school hours.

At least 15 blind pupils are known either to be prepar-

ing for college privately, or to have entered recently after private preparation.

Social Experience. There is a general impression that pupils of braille day school classes react more normally to the social environment than those trained in institutions. Probably social training and opportunities for social contacts are not as inadequate to the needs of the pupils in the day school classes for the blind as they are in residential schools.

Placement and Follow-up Work. Few sightless persons are able to make a satisfactory vocational adjustment without the advice and assistance of some person with experience and training in the field of vocational placement of the blind. Many times public school systems have, at great expense, provided very satisfactory training for the blind pupils of their communities only to drop them at the critical moment when they leave school; a procedure which often results in much unnecessary idleness and disappointment and dependency for the blind people involved.

For many years, the city of Cleveland, Ohio, has maintained on the staff of its braille day school class department a teacher trained in the placement of the blind. This teacher is allowed sufficient time to assist the pupils discharged from the department in finding themselves, both vocationally and socially. Any well organized day school class department for the blind should have a teacher on its staff doing this sort of work.

Location of Classes. Experience has shown that if more than one braille day school class is located in a school building it is likely to hamper the smooth running of the plan, universally followed, of having the pupils attend classes with the seeing children for a major part of their recitations. The grouping of any considerable number of blind pupils in one center also interferes with the natural assimilation of the blind pupils into the recreational life of the school community.

Transportation. The matter of transportation to and from school is a much more complicated problem than would at first appear. In most cities transportation is furnished

to blind students by the school board, as it should be. The regular modes of transportation used by seeing children attending the same school are usually the most desirable for blind children. Often the blind child has a relative or a neighborhood friend who attends the same school and who is glad to act as guide, either without charge or for a very small sum.

Higher Education

While educators of the blind differ as to whether or not blind children should be instructed in special institutions for the blind or in the public schools for the seeing, they are unanimous in their convictions that blind students seeking higher education should attend the regular universities and professional schools established for those who see. Blind students are somewhat handicapped, however, in attending these institutions; first, because special textbooks and special appliances for the blind are not available, and second, because it is difficult for a blind person to earn the necessary funds to finance himself through these four years. Since in many cases higher education enhances a blind person's prospects of becoming self-supporting it has been deemed good public policy for the state to assist such students to take work in institutions of higher learning, and many states have established scholarships of one kind or another for blind students wishing to attend college or professional schools. New York was the first state to make such provision. The use of this allowance was restricted to the payment of readers.

Many features of the New York law were copied by other states. The tendency in recent times, however, has been to make the grant more liberal, both as to the amount and the use to which the money may be put. In the earlier laws the use of the scholarship was restricted to blind students wishing to attend institutions of higher learning within the state of residence. In the more recently enacted legislation this restriction is absent. At present 26 states have similar allowances varying from \$100 to an indefinite amount

limited only by the size of the total appropriation and by the requirements of the individual students.

The difficult problem of finding many congenial posts for blind college graduates where the financial returns and the dignity of position are commensurate with their training, deserves immediate attention. Many of these people are as well qualified as some of their seeing classmates to hold certain kinds of positions, but at the present time there is a lack of definite information regarding positions open to blind persons. There is also a lack of information as to how to proceed in overcoming some of the obstacles of prejudice and misconception which prevent qualified blind persons from securing positions which they are entirely capable of filling. A minor problem connected with this is the necessity of establishing some standard as to what should be required of a blind student before he is given encouragement or financial assistance toward higher education. Educators of the blind are beginning to realize the necessity of restraint in urging blind students to continue their studies beyond high school.

Special Educational Appliances

Special educational devices to be found in residential and day school classes for the blind have become standardized through use but not necessarily through merit. Opinion on the value of the four different kinds of type slates used in the teaching of arithmetic is far from unanimous. Some residential and day school classes make no use whatever of type slates, while others depend upon them to a considerable extent. A study is being made of the relative merits of these various slates by the Department of Special Studies, an experimental primary school conducted jointly by the American Foundation for the Blind and Perkins Institution for the Blind at Perkins.

The slates which are used for writing braille are obtained from the American Printing House for the Blind or the Howe Memorial Press. The slates most frequently used are small ones made of some light material such as aluminum

which can be carried in a pocket or handbag. Styluses for punching out the braille characters are furnished with these slates. Desk slates are large and more cumbersome but provide a firmer foundation for the braille paper. On this account many schools and classes prefer them for use with the younger children.

The Howe Memorial Press and the American Foundation for the Blind manufacture braille typewriters by means of which a whole braille character can be made at once. Experiments are now being conducted by the Foundation with the view to perfecting a stronger, more accurate, yet reasonably priced braille typewriter.

The Illinois School for the Blind and the Chicago Department for the Blind have done most of the experimental work in recent years on desk maps. The only large wooden dissected maps available in this country are made by the American Printing House.

Other types of special apparatus calling for study are those needed in higher mathematics and in some fields of vocational endeavor.

Publications

The *Teachers Forum*, a sixteen page bulletin published bi-monthly during the school year by the American Foundation for the Blind, is the only professional publication which is designed exclusively for people concerned with the education of blind children.

The *Outlook for the Blind*, a sixty-four page quarterly, also issued by the Foundation, is intended to serve a more general public, but contains many articles which have a direct appeal to educators of the blind.

Children in Territories and Dependencies

Little is known of existing conditions for the care, education, and training of visually handicapped children even in the large Territories and dependencies of the United States, and absolutely nothing of opportunities in the smaller ones.

In *Honolulu, Hawaii*, is located the Territorial School

for the Deaf and the Blind. The department for the blind has at present about 14 children and at least 2 teachers, one of whom has received training at Perkins Institution and Massachusetts School for the Blind.

The School for the Deaf and Blind at Pasay, Rizal, in the Philippine Islands has approximately 140 pupils, but it is not known how many of these are blind. The school, which was established in 1907 and moved to its present site in 1923, is supported by insular funds. It is under the direction of the United States Office of Education, and is open to any blind or deaf child in the Philippine Islands. Books, food, and lodging are furnished free.

In *Alaska* indigent blind children are cared for by the Board of Children's Guardians which usually sends them to some institution in the United States. Those whose parents can afford to pay for the education of their blind children are expected to do so.*

Information for the School for the Blind in *Porto Rico*, which is the most complete of all the territorial group, was secured from the following memorandum on that school made for the Commissioner of Health of Porto Rico, and recently forwarded to the American Foundation for the Blind, through the courtesy of Governor Theodore Roosevelt. At present, because of the extreme poverty of the island, there is a grave danger that it will be necessary to discontinue the annual appropriation to this school, at least for a few years.†

The first effort to teach blind children in Porto Rico was made in Ponce at the Asylum for the Blind in September, 1919. The first teacher, who is at the present time Superintendent of the Institute for Blind Children in Porto Rico, Loazia Cordero, was appointed by the Commissioner of Education and detailed to work at the Asylum for the Blind. At that time Miss Cordero had just arrived from Boston, where she graduated from the Perkins Institute of Boston. In January, 1920, the small class of blind children moved into a small

* There is also a school for blind native children at Tanana.

† Memorandum made by P. N. Ortiz to the Commissioner of Health of Porto Rico, and forwarded by Señor E. J. Saldana, Executive Secretary.

house rented by the Department of Health, but the children lived in their usual quarters. Two more teachers and one assistant were added to the staff, their salaries being paid by the Junior Red Cross and by the Department of Education of Porto Rico. These teachers also got their training at Perkins Institute and at the New York Institute for the Education of the Blind.

In the year 1923, the Legislature of Porto Rico appropriated in the budget of the Department of Health \$600 for house rent, \$2,000 for general expenses and the salaries of a superintendent, a special teacher, and an embosser of braille books.

Loazia Cordero in the year 1920 had founded the Benevolent Association for the Blind. With the assistance of the Association the institution began to acquire independent personality. In the year 1926 the school moved into the first building erected by the Junior Red Cross on a lot granted by the Legislature of Porto Rico, and an appropriation was made for the care, maintenance, and instruction of 30 children. At the same time the Legislature assigned a lot of nine acres and \$60,000 for the erection of the building. With \$37,000 of this amount the main building was constructed and inaugurated in March, 1928.

At the present time the institution is composed of two buildings: namely, the main building and the Junior Red Cross Building which accommodates 30 children, girls and little boys. Two classrooms of the main building are being used for a dormitory for 20 older boys until the boys' dormitory is built. In the main building there are the following departments: general offices, file, medical and dental clinics, library, museum, a room where books are made on braille writers, a room where caning and carpentry are being taught by an ex-pupil and where the seamstress works, and two classrooms where two special teachers teach Grades I and VII.

The present status is as follows: There is room for 50 pupils and an appropriation of \$27,250 for maintenance. Unless another dormitory is built and an appropriation for food, clothing and general expenses is provided, no more children can be admitted. The per capita cost a pupil is \$545.

The census made by the Benevolent Association in 1921 gave a total of about 300 blind children on the island. There are also many partially sighted children, but as a school for them would be expensive they should also be taken care of by the Institute for Blind Children of Porto Rico. Babies who might be saved from blindness, should have a place more or less related to this institution.

CARE AND TRAINING OF CHILDREN WITH SERIOUSLY
DEFECTIVE VISION *

The problem of the education of partially seeing children is twofold. It must meet the needs of those who, because of progressive eye difficulties, should not use the ordinary school equipment, and those who, because of low vision, cannot do so.

From April, 1913, when the first special class in the United States was established for the education of partially seeing children, the growth has been slow but continuous.† On January 1, 1930, there were 350 such classes. Since experience shows that probably one child in 500 of the school population needs this type of special education, over 50,000 children must be taken into account; of these less than 5,000 are in sight-saving classes.

It is estimated that 70 per cent of the population of the United States is in communities of less than 30,000 inhabitants; hence, educating partially seeing children of the semirural and rural districts is the major part of the problem.

Of the 350 classes established, 348 are in cities and 2 in counties, demonstrating what can be done for the education of partially seeing children in urban and semirural communities. For rural children little has been accomplished, even as a demonstration. A few are boarded in cities having classes. A few are helped by aid given by unofficial organizations to the teachers in rural schools. Many are sent to schools for the blind, where they are quite as likely to be misfits as in regular grades, for in neither are conditions suited to their needs. Probably the best suggestion so far made is that of establishing sight-saving classes in the demonstration schools of teacher training institutions, where the children may be under the care of a competent house mother, may do work requiring close use of the eyes under a trained

* For more complete discussion see *Special Education*. A Publication of the White House Conference, New York, The Century Co., 1931.

† In September, 1932, there were 410 sight-saving classes located in 22 states and 118 cities.

teacher, and engage in all activities not requiring close use of the eyes with their normally seeing companions. This method would benefit not only the children but the student teachers, who could later apply the knowledge thus obtained.

Although the growth indicated in the number of sight saving classes established in elementary schools is fairly encouraging, a considerable number of graduates require advantages offered by junior and senior high schools. To some extent such opportunities are offered, ranging from actual classes established to the providing of advisers and student readers, but in altogether too large a number of communities no such provision is made; hence much of the value of the special education provided in the elementary school is lost.

Children who have a visual acuity of between 20/70 and 20/200 in the better eye after correction, or who have progressive eye difficulties, are candidates for sight-saving classes. The placement of border line cases is decided according to the possibilities of the individual. The placement of children with more than one handicap is determined by the major difficulty.

It is generally conceded and is so written in some state laws that all children placed in sight-saving classes shall have an I.Q. of at least 70.

So far as the physical environment of the school is concerned, conditions which are ideal for the normally seeing are equally so for the partially seeing. In both groups these are often far from ideal.

The same educational standards and the same curricula apply to both groups, with the exception that in the latter changes are made in the method of instruction in those subjects that may otherwise prove harmful to eyes that are not normal. The chief differentiation between the two groups consists in special attention to eye care in sight-saving classes and the provision of special educational equipment: books in large, clear type; typewriters in large type; large size paper; heavily leaded pencils; maps without detail; and other mate-

rial that may be used even by weak eyes without eyestrain. Much research is necessary to determine the best educational media.

Four and one-half per cent of the children in sight-saving classes are able to return to the regular grades because of improvement in eye conditions. This is not only encouraging, but furnishes a definite though incidental reason for using regular curricula and standards.

Since eye care is the first consideration in these classes, especially for children with progressive eye difficulties, efficient and adequate ocular service is of the greatest importance. In only 50 per cent of the classes is ocular service provided regularly, and even here it often fails to meet all the needs. Steps should be taken to provide the best possible service for all such classes, for the purposes of prevention as well as to give present help.

The sight-saving class teaching personnel is composed of a group having in the main good educational foundation; a fairly high percentage of these teachers are specially trained for this work. Gradually communities are requiring the special training of all teachers undertaking this type of educational work, and an increasing number of teacher training institutions in various parts of the country are offering courses.

Special sight-saving class supervisors are provided for the classes in 29 of the 95 cities having this special type of education, and supervisors of special classes in 34. Sight-saving classes in the remaining cities have no special supervision other than that accorded regular grades.

Supervision is a large factor in the success of such classes and should be given more careful attention. It is exceedingly important in training teachers on the job; in keeping them acquainted with the most advanced methods and the best material; in organizing new classes; and in making contacts with regular grade teachers, school principals, and, in particular, with ophthalmologic service.

The state, since it makes education compulsory, should

aid in providing it in a form that can be assimilated. Fourteen states have assumed their obligation in this matter by enacting legislative measures and by providing financial assistance in the form of a per capita appropriation, an arrangement for the expenditure of special sums, or the payment of a part of the teacher's salary. Ninety-four and a half per cent of all sight-saving classes have been established in these 14 states. On the other hand, 11 out of 35 cities having a population of over 100,000 without sight-saving classes are in states making financial provision.

The per capita cost of educating children in sight-saving classes ranges from \$132 to \$331 a year and averages from \$200 to \$250. The per capita cost of educating children in regular grades varies from \$47 to \$124; in classes for the deaf from \$226 to \$431; in orthopedic classes from \$86 to \$378.

On first consideration the per capita cost of educating partially seeing children may seem high. But the number is so small that this cost compared with the total cost of education in any one state is almost negligible. The justification of the cost lies in making such children assets rather than liabilities to the state, and in raising the morale of the children, as indicated by the increase in promotion rate after children enter sight-saving classes with the accompanying encouragement to pupils, parents, and teachers.

With very few exceptions, teachers of sight-saving classes receive a higher salary than teachers with corresponding qualifications for grade work, the differential ranging from \$30 to \$400 a year.

Since the number of partially seeing children is small in comparison with the general school population, several grades must often be taught by one teacher. When not more than four grades are represented and when there are no complicating factors a teacher can care for 16 children, although this is not advisable. Often, however, she is obliged to accept a larger number of grades and a larger number of pupils. Helpers are sometimes appointed, usually extra

teachers for part time, or student readers who assist by reading assignments for which there are no books in large type. The limited variety of books in large type, especially for junior and senior high school pupils, adds a great burden to the preparation work of the teacher.

Possibly the most perplexing of the many problems of the partially seeing is that of how they are to earn a living.

Sight-saving class teachers make efforts from the time children enter their classes to give vocational guidance, helping them to look forward to an occupation that will not cause a deterioration of the sight they still possess. Vocational bureaus give very little service in the careful selection of an occupation for such students and for their placement, nor has the matter of prevocational and vocational training received the attention the seriousness of the problem demands.

Only two cities, Cleveland and Detroit, report provisions for sight-saving class pupils in vocational junior high schools.

To obtain the greatest possible advantages for the partially seeing, the actual matter of training must be considered and surveys made of the available occupations that may safely be undertaken by members of this group.

The follow-up of sight-saving class pupils at present depends too much upon the continuing interest of the sight-saving class teacher, already fully occupied in caring adequately for those in her present class. Only through a regular follow-up system can the students of these classes receive the full benefits from the carefully planned and equally carefully carried out educational programs.

The greatest need is to reduce to a minimum the number of students requiring this type of education. This may be expedited by greater care in regard to eye difficulties of preschool children that are susceptible of correction or cure, by providing better medical service and better environmental conditions for regular grade pupils, but chiefly by discovering the cause of eye difficulties and eliminating them whenever possible.

PREVENTION OF BLINDNESS AND CONSERVATION OF VISION*

Causes of Blindness Among Children

Since uniform nomenclature has not been employed in reporting causes of blindness among children entering residential schools and day school classes for training the blind, it is not possible to gather from the printed reports a set of facts that can be tabulated to give a picture of the country as a whole or trends for different diseases.

During the last three years, however, statistics have been assembled in a uniform way for most of the schools and classes throughout the country. Table 11 gives, under ten different headings, the causes of blindness in approximately 3,900 children for a period of three years.

TABLE 11

CAUSES OF BLINDNESS AMONG PUPILS IN RESIDENTIAL AND DAY SCHOOL CLASSES FOR THE BLIND, SHOWN FOR SCHOOL YEARS 1926 TO 1929 ^a

Causes of blindness	PUPILS IN CLASSES FOR BLIND							
	1926- 27 Num- ber	1927- 28 Num- ber	1928- 29 Num- ber	Total 3 years Num- ber	1926- 27 Per cent	1927- 28 Per cent	1928- 29 Per cent	Total 3 years Per cent
Ophthalmia neona- torum.....	758	676	690	2,124	19.4	17.3	17.5	18.0
Trachoma.....	60	61	55	176	1.5	1.6	1.4	1.5
Progressive myopia.	74	79	60	213	1.9	2.0	1.5	1.8
Interstitial keratitis.	117	113	137	367	3.0	2.9	3.5	3.1
Phlyctenular kerati- tis.....	19	25	37	81	.5	.6	.9	.7
Optic nerve atrophy.	525	545	559	1,629	13.4	13.9	14.2	13.9
Accidents.....	356	371	364	1,091	9.1	9.5	9.2	9.3
Congenital cataract.	526	546	585	1,657	13.5	13.9	14.9	14.1
Other congenital causes.....	627	642	508	1,777	16.1	16.4	12.9	15.1
Other causes.....	843	859	945	2,647	21.6	21.9	24.0	22.5
Totals.....	3,905	3,917	3,940	11,762	100.0	100.0	100.0	100.0

^a Figures based on answers from twenty-nine residential and twelve day school classes.

It is highly desirable that a more complete and uniform classification should be followed by school authorities in setting out the causes of blindness and that an exact diagnosis

* Prepared by B. Franklin Royer, Medical Director of the National Society for the Prevention of Blindness.

should be given annually for all new registrants. This procedure has been followed a number of years for ophthalmia neonatorum. Figures on this cause give striking evidence of the possibilities of prevention of blindness. Fifty years ago ophthalmia neonatorum was probably responsible for more than 40 per cent of the blindness in children entering training schools and classes for the blind. Twenty-five years later the adoption of prophylactic procedures and improvements in obstetric practice had reduced the incidence of ophthalmia neonatorum as a causative factor considerably. More general use of prophylactic procedures and special legislative requirements have still further reduced blindness from this cause.

Community Provisions for Medical Assistance

Location and Treatment of Cases. No legal plan has been evolved for exacting a report of blindness in children. Generally speaking, it is only when school age is reached and when teachers are required to report non-attendance that anything approaching a complete list of the children who are blind is secured. Only when the existence of all cases of blindness is known can we hope to have treatment for everyone who is in need of it. In communities with well organized clinics, where the social agency properly appreciates the importance of securing first hand knowledge of the eye condition, the blind may receive appropriate treatment. For a vast number of the population no such facilities are available. In states having commissions for the blind, field agents and home teachers of these organizations perform a large part in locating blind children needing treatment and in arranging hospitalization when it is necessary. Vision is often salvaged by a cooperative procedure, especially in cases of congenital cataracts, or in securing intensive and prolonged treatment of congenital syphilis. Certain states conduct a series of community clinics, widely advertised in advance to locate blind children, to which all the needy with serious vision defects are brought.

Ophthalmia Neonatorum. In every state public health authorities have assumed some responsibility for the control of this disease. It is the only one of all the problems in the prevention of blindness which is being aided in considerable measure by legal process.

Table 12, prepared from the 1930 report* of the Standing Committee on Conservation of Vision of the State and Provincial Health Authorities of North America, shows the practice in each state with regard to three of the most important procedures:

Requirements regarding the reporting of cases of ophthalmia neonatorum to local health authorities

Enforced use of a prophylactic in the eyes of all babies at birth

Free distribution by the state of a prophylactic to be used by the attendant at birth.

Table 12 shows that there are still 5 states in which the reporting of ophthalmia neonatorum is not universally required, 14 states in which the use of prophylactic is not required at all births, and 22 states which do not supply free prophylactic for all births. The absence of regulations, however, may not mean failure to protect the eyes of babies. A high degree of cooperation of physicians, midwives, and parents may be secured in some places, without such mandatory legal procedure.

Other Factors in Prevention of Blindness

The department of health plays or should play an important part in the prevention of blindness due not only to ophthalmia neonatorum but to other causes. Health authorities are attacking the problem of blindness due to these important causes through minimizing the incidence of smallpox, scarlet fever, measles, and similar diseases, and through

* *Proceedings of the Forty-fifth Annual Meeting of the Conference of State and Provincial Health Authorities of North America.* June, 1930. Reprints available from National Society for Prevention of Blindness, New York City.

TABLE 12

STANDING OF STATES ON CERTAIN PROCEDURES FOR THE PREVENTION OF
BLINDNESS DUE TO OPHTHALMIA NEONATORUM

State	Cases reportable to health officer	Use of prophylactic at birth required	Prophylactic supplied free by state
Alabama.....	x	x	x
Arizona.....	..	x	..
Arkansas.....	x	x	..
California.....	x	g	x
Colorado.....	x	..	..
Connecticut.....	x	b	x
Delaware.....	x	x	x
District of Columbia.....	a	a	a
Florida.....	x	a	x
Georgia.....	x	x	x
Idaho.....	x	x	..
Illinois.....	x	..	x
Indiana.....	..	x	..
Iowa.....	x	x	c
Kansas.....	x	x	x
Kentucky.....	x	x	x
Louisiana.....	x	x	x
Maine.....	x	x	c
Maryland.....	x	a	a
Massachusetts.....	x	g	c
Michigan.....	i	x	x
Minnesota.....	x	x	x
Mississippi.....	x	d	x
Missouri.....	x	x	x
Montana.....	x	..	x
Nebraska.....	x	x	..
Nevada.....	x	x	..
New Hampshire.....	x	x	h
New Jersey.....	x	x	x
New Mexico.....	x	x	e
New York.....	x	x	x
North Carolina.....	x	x	x
North Dakota.....	x	x	..
Ohio.....	x	g	x
Oklahoma.....	x	x	x
Oregon.....	x	x	..
Pennsylvania.....	x	x	x
Rhode Island.....	x	x	x
South Carolina.....	x	x	x
South Dakota.....	x	f	c
Tennessee.....	x	x	x
Texas.....	..	x	a
Utah.....	x	..	a
Vermont.....	x	..	c
Virginia.....	x	x	x
Washington.....	x	x	..
West Virginia.....	x	x	x
Wisconsin.....	x	x	x
Wyoming.....	x	x	..
Totals, Yes.....	44	35	27
No.....	3	5	11
Limited.....	2	9	11

a Midwives only.

b Midwives and state aided hospitals only.

c Physicians only.

d Midwives, hospitals and homes only.

e By counties.

f Unless parent or guardian object.

g Maternity hospitals and homes only.

h To some hospitals and welfare associations.

i Gonorrheal cases only.

x Means yes;

.. Means no;

Limited totals represented by letters a to i.

their fight against syphilis and tuberculosis. They are chiefly responsible for projects for the treatment and control of trachoma in locations where it is prevalent. Departments of health cooperating with departments of labor and industry, and with workmen's compensation and insurance departments are responsible for many laws and regulations protecting eyesight in industry. The visiting nurse service of the health and allied departments is probably the most important factor in the solution of problems involving hygienic living, now recognized as an important method of treatment for certain eye diseases.

Through cooperation of health and school authorities the practice of providing regular physical examinations for school and, in some places, for preschool children is becoming increasingly frequent.

Although it is impossible to check statistically on the effectiveness of these procedures over a period of years, figures for new admissions to schools for the blind indicate that whereas the population of the country has increased about 17 per cent during the past ten years, the number of new admissions (all causes) has increased only 7 per cent. Those due to causes other than ophthalmia neonatorum increased 11 per cent. This relative decrease in the number of blind children has occurred even though some states have instituted more effective machinery for finding blind children and getting them into the schools. Since the list of causes includes congenital diseases for which no control measures are known, the reduction must be even greater than the above figures indicate.

In city, town and country the greatest need is for a suitable medical and social follow-up to correlate these activities with those of ophthalmologists so that the advice of the doctor is not lost. It is estimated that in many areas one-half of the service of the physicians is lost because, after he has established a diagnosis and started treatment the patient fails to return for follow-up advice and the continuance of treatment.

Treatment of Physical Handicaps Related to Visual Handicaps

Considerable confusion exists relative to the amount of blindness that may definitely be charged as sequelae to the different types of meningitis. Generally speaking, where vision is affected from the epidemic cerebrospinal type of meningitis, the disease extends from the anterior and lower surface of the brain along the lymph pathways and blood vessels to the interior of the eye. Fuchs refers to findings of purulent areas in the choroid. Usually death follows. In recovery cases optic atrophy may develop from the pressure of healing scars inside the skull, or the optic pathway between the eyeball and the cortex of the brain may suffer atrophy or destruction from excess pressure of fluids in the ventricles of the brain or from blocking of the canals or foramina which equalize pressure between brain and spinal fluids.

Treatment by injection of special sera within the spinal canal or directly into the ventricles of the brain during the acute stages of the epidemic diseases minimizes these after effects. Treatment after recovery to avert loss of vision has not been successful.

Exactly similar conditions may occur in acute meningitis caused by other organisms such as the pneumococcus or streptococcus. In the absence of a remedy specific in character, recoveries without tragic sequelae are not as likely as in the epidemic type of meningitis. Medical science has little to offer where the meningeal involvement is caused by the tubercle bacillus. The disease almost invariably results in death or chronic invalidism, with distressing eye sequelae, sometimes complete blindness, preceding death.

Encephalitis lethargica (sleeping sickness) a type of meningitis about the base of the brain, concerning which little is known, usually comes in the wake of community epidemics of influenza. Not enough is known about the causative factors and course of this disease for evaluation of end results. Future research may clear up this problem.

The greatest amount of vision impairment and blindness following meningitis is definitely chargeable to syphilitic involvement of the meninges, or of any of the brain structures. The prospects for averting eyesight losses are directly proportional to the time at which recognition of the case occurs, the length of time the disease has been active, and the thoroughness of treatment. Results from treatment of cases recognized only at the third stage of syphilis are less hopeful and associated eye lesions are more likely to be incurable than those taken in the earlier stages. Appropriate treatment may do much to avert the eye catastrophe even after syphilitic meningeal involvement has been recognized, but the greatest hope lies in prevention of syphilis, in early recognition where prevention has failed, and in systematically treating the disease long before the special sense organs are affected.

A very large number of individuals who have suffered from epidemic diseases which attack the mucous membrane of the upper respiratory passages, develop a boggy condition of the mucous membranes lining the sinuses of the nose and cavities in the hollow bones in the front of the head and face—a pathologic condition which favors the growth of various types of infection that may gain access to these tissues. Many individuals develop chronic conditions with recurring inflammations in these areas which may extend to the eye and set up serious inflammatory conditions in any of its muscular or nerve structures.

The remedy lies solely in treatment of the first focus of disease possibly with surgical treatment to establish more favorable drainage of the sinuses which has been interfered with by the boggy condition of the membrane, and to secure better ventilation of the sinuses, in order to render them less favorable to bacterial growth.

Foci of infection may develop at the roots of diseased teeth or in the vicinity of the tonsil that may become excitants of inflammatory conditions of the eye. Tooth socket infections especially of the upper jaw usually affect the eye

health first, by involving the hollow sinuses in the upper jaw, and later extending to the eye tissues.

The literature discussing these various focal relationships is not very satisfactory. Correlated research is needed in order that scientific proof may support each alleged relationship here discussed.

VISUALLY HANDICAPPED CHILDREN WITH ADDITIONAL DISABILITIES

Serious visual defect is a sufficient handicap which tests the courage and ambition of the average person. But there are thousands of individuals who must fight not only blindness or partial blindness, but other handicaps which are even greater deterrents to satisfactory vocational and social adjustment in life. Among the blind and partially seeing people thus additionally handicapped, the feeble-minded, the aurally handicapped, the crippled, and the emotionally unstable are most in need of attention at the present time.

The Blind Feeble-minded

Doctor O. H. Burritt of the Pennsylvania Institution for the Instruction of the Blind, Overbrook, Philadelphia, has contributed valuable information and suggestions on the subject of the blind feeble-minded. The following paragraphs quoted from a paper by Doctor Burritt * offer specific suggestions for remedying the present highly unsatisfactory arrangements pertaining to this physically and mentally handicapped group.

Two points of view relative to the care of these children in training schools for the feeble-minded are held by educators of the blind and students of the problems of the feeble-minded. The blind feeble-minded should be classified:

Either according to the usual standards and assigned to the groups to which they belong and would be assigned could they see. For each group of eight or ten such children there should be employed a special

* Burritt, O. H., "The Visually Handicapped Feeble-minded." *The Teachers Forum*, March, 1931.

teacher. This teacher should be an experienced teacher of blind children who will inevitably have touched the fringe at least of the problems of feeble-mindedness. Working in a residential position in a training school for the feeble-minded she would rapidly accumulate and absorb more exact information concerning the problems that specifically concern the feeble-minded. With this equipment she could aid the teachers in the institution for the feeble-minded in assigning each blind feeble-minded child to his appropriate group for training in simple elementary subjects such as arithmetic, history, and poetry; weaving and chair caning; and could also give individual assistance to each child in accordance with his need. In such other elementary subjects as require specialized instruction on account of blindness, as reading and writing, and perhaps typewriting, she would supply the necessary individual instruction. After studying this problem for forty or fifty years Pennsylvania has just decided to initiate such an experiment in one, possibly two, of its institutions for the feeble-minded.

Or, these blind feeble-minded children should be provided for in a special cottage with an adequate staff to provide both the custodial care necessary and such diversified elementary instruction as each child can assimilate.

As the number of these children is relatively small and as the solution of the problem is still very problematical it seems wise to initiate, in a progressive school for the training of the feeble-minded, an experiment by which the blind feeble-minded shall be distributed among the seeing feeble-minded in accordance with each child's mentality.

Endorsing this statement in its entirety, it is suggested that for the group usually diagnosed as morons and any others who may belong to the so-called *borderline area*, there should be provided in each residential school for the blind, and in conjunction with each day school for the blind, where feasible, an *observation cottage*. Under a teacher, trained and experienced in work for the blind, it can be determined gradually whether these children belong in the group of blind feeble-minded whose primary need is suitable elementary training and custodial care, or whether they can be advanced educationally in some subjects by individual instruction and other subjects by class instruction in the school for the blind.

Such an arrangement will also provide an opportunity for the training of a small pupil teacher group some of whom, possessing the essential qualifications, may look forward to aiding in the further

training and development of some of these children in their own homes under parental care and supervision. Thus we would meet the needs of two groups: that of trained capable blind young women for continuous remunerative employment; that of blind feeble-minded children.

As the education of the blind and the custodial care and training of the feeble-minded are now generally recognized in the United States as an obligation of the state, and as facilities more or less adequate are provided in most states, all that is lacking to secure the initiation in each state of the program here advocated is a sympathetic understanding of the problem by the executives of the schools for the blind and of the training schools for the feeble-minded, and a determination to substitute action for words.

Among children not blind, but with serious visual handicaps, those who should be taught in accordance with methods now generally used in sight-saving classes, there is a substantial number who are feeble-minded. For these everything possible should be done to provide adequate training and care in their own homes, if suitable. In cases where such care is not possible they should be cared for in training schools for the feeble-minded, as an integral part of the groups to which they belong on the basis of their mentality. Unquestionably these children should be absorbed into several groups of the feeble-minded who see.

In populous centers classes for these children with defective vision should be organized in which the subjects taught and the methods used are those applicable to the feeble-minded child with vision. For such, training that each can absorb should be provided in classes as an integral part of the public school system.

The Deaf-blind

Material help on the deaf-blind has been received from Doctor Edward E. Allen of Perkins Institution, and Rebecca Mack and Mrs. Wilfred Rouleau (Corinne Rocheleau). During the last fifteen years Miss Mack and Mrs. Rouleau have located 618 cases of deaf-blind people in this country, about 100 of whom are children or adolescents, and have done what they could to better their condition. Probably many more deaf-blind people could be found in schools for the feeble-minded and similar institutions, whose mentality,

because of non-recognition of their visual and aural handicap, was misjudged. The following paragraph is quoted from an article by Mrs. Rouleau and Miss Mack.*

Deaf-blindness doubtless presents the most complicated of all educational problems because it can be so variable in kind and degree; because its contributing causes are likewise varied; because it requires from the teachers not only the usual knowledge of pedagogic, but also of the highly specialized methods in use for the training of the deaf and the blind; and because it calls for after-care and follow-up work on the part of some welfare agency, an agency familiar with all these methods and also with the vocational problems of the deaf-blind. . . . And no matter in what class the deaf-blind may belong, what special type of deaf-blindness may be theirs, the greatest need is for education. But as to how this education should be given, opinions differ. Some educators hold for the purely oral method; others of equal experience contend that the deaf-blind are so seriously handicapped that in each individual case, the general advancement of the pupil should be the paramount issue, all methods being good if they serve that end, ingenuity and resourcefulness being necessary ingredients in the make-up of the successful teacher of the deaf-blind.

Mrs. Rouleau and Miss Mack strongly urge the establishment of an educational center for observation, classification, and elementary training of all newly discovered cases of deaf-blindness. As soon as possible these boys and girls should be returned to their home cities in order that they may live in seeing and hearing communities. While it does not seem wise at present to recommend the establishment of a national center for the deaf-blind the suggestion is worthy of serious consideration.

One teacher for a deaf-blind pupil throughout his elementary training seems to be the most feasible method of establishing normal contact of the deaf-blind child with the rest of the world. Doctor Allen in commenting on the wisdom of this method has stressed the importance of vacations for the teacher, however, because of the constant strain that

* Rouleau, Corinne Rocheleau and Mack, Rebecca. "The Deaf-Blind in the United States Today." *The Teachers Forum*, January, 1931.

such work entails. Regarding the proper place for the education of the blind-deaf child Allen writes as follows:*

In an elementary school for deaf children every subject serves for language instruction; and nowhere else is language taught with such persistence and precision. This child will learn to articulate, to type-write and to read and write braille there, and to make use of other tangible apparatus. But when in time he becomes ready for departmental class instruction, perhaps teacher and pupils should change to a school for blind children; the teacher will not need to change her status to that of interpreter. The child should put in a considerable period of his school life there anyhow. He will not find elsewhere an equal wealth of special appliances to help clarify his study concepts, nor such chances and incentives to talk with schoolmates for whom English is the natural medium of communication. Blind children quickly take up finger spelling which, read by the hand, becomes a rapid and remarkably telling way of talking with mates who cannot hear. Could Helen Keller have gone through Radcliffe without it? Impossible. Palm-writing and glove-writing, even though obviously more applicable to the world at large, are slower and less demonstrative.

The Crippled Blind

Crippled blind children are probably well cared for physically. Very few of these children have been located and it is probable that the number of visually handicapped children who are sufficiently crippled to call for special physical care is very limited compared to the total number of children with seriously defective vision. The lot of these children is pathetic and every effort should be made to locate as many of them as possible and to ensure for each one that type of care and training which promises his greatest future happiness.

With the exception of the Chicago Public Schools, which have a class of three blind and six partially seeing crippled children who are being trained in a special room at a public school center for crippled children, no agency is making an effort to meet the special problem raised by this group, ex-

* Allen, Edward E. "The Deaf-Blind." *The Teachers Forum*, January, 1931.

cept when they are so low-grade mentally that they can be made bed patients in an institution for the feeble-minded. Probably the few physically handicapped crippled children who can move about with some degree of independence can be educated best in a school or class for the blind or in a sight-saving class. No one has tried to solve the problem of what should be done with the others—a problem which needs attention.

The Emotionally Unstable Blind

One group of visually handicapped children, the emotionally unstable, has as many special needs as there are children in the group. While many of these have normal or superior intelligence, their educational, vocational, and social adjustments are unsuccessful because of the unsettling effect of their psychologic problems. The problems involved are complex and difficult to solve and considerable thought and experimentation will be necessary before the effective psychologic and psychiatric service, now within reach of those who see, can be made available to blind children. Probably the most practical way of building up a satisfactory service is to establish a psychologic clinic equipped to provide actual clinical treatment and able to carry on constant experimental work.

EXPERIMENT IN PSYCHOLOGY AND EDUCATION OF THE BLIND

Interest in the scientific approach to the psychologic and educational problems of blind children first manifested itself in a concrete form in 1914 when Robert B. Irwin went to Vineland, New Jersey to begin work on the development of a series of intelligence tests for use with blind people. Two years later Perkins Institution and Massachusetts School for the Blind added a mental tester to its staff. In 1917 the Pennsylvania Institution for the Instruction of the Blind established a Department of Research with Doctor Samuel P. Hayes of Mount Holyoke College as its director, and a resident mental tester. Doctor Hayes took up the work begun by Mr. Irwin of adapting the Binet tests for use with

the blind. In 1919, Doctor Hayes was also made director of the Department of Research, later known as the Department of Applied Psychology, at Perkins Institution and Massachusetts School for the Blind. Since that date both schools have maintained research departments with a resident psychologic examiner in each school.

Since 1919 these two departments working together have made Binet surveys in at least 14 schools for the blind and 10 schools have been completely tested by local testers. The Hayes Adaptation of the Terman-Binet Tests has just been published after years of testing and retesting to assure the proper placement of each test in the scale.

These two departments and the American Foundation for the Blind have also adapted a number of group achievement tests for use with blind people.

At Perkins something has also been done to improve the mental adjustments of blind students with personality handicaps, and surveys of speech defect have been made both at Perkins and at Overbrook.

In 1924 a research psychologist was added to the staff of the American Foundation for the Blind. Her first project, a study of methods of teaching braille reading, proved to be the forerunner of other and more extensive experimental work which culminated in 1927 in the establishment by Perkins and by the American Foundation for the Blind of a Department of Special Studies for which Perkins gave the use of its lower school. This department is an experimental primary school under the direction of an experienced supervisor.

The Department of Applied Psychology at Perkins has cooperated closely with the Department of Special Studies with gratifying results. The achievements of the experimental school during its three years of existence include a study of the relative merits of two arithmetic type slates, the preparation of a pamphlet on motivating primary braille reading, an investigation of the best methods of carrying on nature study with blind children, and a study of the relative merits of the use of the braille slate or the braille typewriter in teaching beginners to write.

The State of California has been conducting an extensive clinical survey and study of the pupils in the State School for the Blind, the report of which has been published in The Proceedings of the American Association Instructors of the Blind for 1930.

In these few centers, experimental work on the psychology and education of the blind has been well established, but in order that its benefits may be felt throughout the country some method should be devised for instructing teachers in the uses of improved technique, as developed. Summer courses in certain schools or teachers' institutes in different sections of the country may be the best solution.

In answer to an inquiry 28 residential schools and 11 braille class systems report some provision for the psychology testing of their pupils. To those who have had occasion to follow the history of experimental work with blind children, these numbers bespeak a rapidly growing appreciation of the value of a careful study of their handicapped pupils.

RECOMMENDATIONS

Although every subject touched upon in this report needs further investigation, many of them calling for prolonged, careful experimentation and research, only those topics which appear to be fundamental to the rest and which can be handled best on a national scale are presented here.

1. In order that blind children may develop as normally as possible it is urged that the care and training of preschool blind children be subjected to careful study, with special emphasis on the following:

The value of the nursery home for blind babies

The adequacy of the visiting teacher or nurse in urban and rural communities as a substitute for institutional training

The value of play materials now in existence and the invention of new ones designed to take the place of visual stimuli for seeing babies

The means for preventing objectionable mannerisms and for curing those which have already developed.

2. So far as increased educational facilities for the visually handicapped are concerned, it is recommended that:

The establishment of sight-saving classes be encouraged in both elementary and secondary schools

The establishment of braille classes be encouraged

An effort be made to provide supervision for sight-saving and braille classes to insure adequate protection of their interests.

3. It is recommended that residential schools for the blind be given more effective supervision by state departments of education in order that continuance of high scholastic standards may be assured.

4. In order that blind children may be at least as well equipped scholastically as other children, it is recommended that a study be made of their special educational needs throughout the twelve grades. In connection with this study particular attention should be given to the adequacy of present educational facilities for blind colored children.

5. In order to further the normal social development of blind children it is urged that a committee be appointed to study the possibilities of training for social intercourse, and to present a body of suggestions which may serve as guides to educators and parents.

6. Because of the vital importance of a well poised, attractive personality to the future success and happiness of blind children, it is urged that steps be taken immediately to establish a psychologic service available to organizations for the blind throughout the country, this service to include clinical service, study of personality problems, and vocational and educational research of a psychologic nature.

7. It is recommended that a committee be appointed to foster experimental work on the vocational guidance, training, and placement of blind and partially seeing people, this committee to include representatives of employers' organizations, of the American Federation of Labor, and of placement workers and educators concerned with the care and training of the blind and the partially seeing.

8. Owing to the increasing number of blind people attending institutions of higher learning and to the serious special vocational problems facing them, it is urged that a

careful study be made to discover ways of assisting these blind people in finding more satisfactory opportunities for employment.

9. It is urged that a more adequate provision be made for the training and after care of the deaf-blind. The United States has lagged behind the more progressive of the European countries in meeting the needs of this group.

10. Since the presence of extremely backward children in residential schools for the blind is detrimental to the best interests of the normal and superior children, it is suggested that a committee composed of administrators of schools for the feeble-minded, of medical specialists, of psychologists, and of heads of schools for the blind, be appointed to develop a workable plan for caring for this group of children.

11. That the professional status of the work for the blind may be raised, it is suggested that a committee be appointed to prepare a set of minimum standard requirements for entrance into the different branches of the work, and to suggest ways of attracting to the field workers of the highest caliber.

12. For the purpose of clarifying nomenclature regarding causes of blindness and degree of blindness, it is suggested that the Committee on Central Registration of the Blind which is sponsored by organizations for the blind, and which is already considering this question, be urged to present its report as soon as possible.

13. When a simple and practical classification has been provided, it is recommended that the Federal Census Bureau sponsor a census of the visually handicapped which will afford a more complete picture of the extent of the problem as it exists in this country as a whole.

14. Because of the present lack of exact knowledge regarding the condition of visually handicapped children and the facilities for their care, education and training in the territories and dependencies of the United States, it is recommended that a survey be made which will disclose the extent of the problem and the adequacy of existing provisions.

15. The final recommendation is that all committees which may be appointed shall be required to report their progress at the end of a reasonable period of time.

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THE CRIPPLED

ACKNOWLEDGMENT

The Joint Committee takes this opportunity to express their sincere appreciation for the generous cooperation of the Federal Children's Bureau, the United States Office of Education and the Bureau of Vocational Rehabilitation, whereby official published reports and valuable unpublished sources of information have been made available for study.

Private organizations contributed in many ways. The International Society for Crippled Children placed its files of materials accumulated over a period of ten years at the service of the Joint Subcommittee, furnished office space and a large portion of the time of its executive secretary. The executive secretaries of the state societies for crippled children were untiring in their efforts to secure data. Civic, service, and fraternal organizations, and women's clubs furnished data relating to their widely varied activities. Notable among the services rendered by these societies was the contribution made by the Crippled Children's Committee of the Chicago Rotary Club.

The Committee wishes also to express its appreciation to the members of the Advisory Committees and to all those persons and agencies that so kindly filled in their questionnaires and prepared monographs.

THE CRIPPLED

DEFINITION

ALL crippled children do not deviate from the normal to a degree that makes them special problems. They range from the child who needs no unusual physical care, education, or vocational training, to the child who is confined to his wheel chair, or to his bed, and whose potential residual strength makes special provision for him necessary through his life.

The following definitions are presented by the Joint Subcommittee for consideration:

A crippled child is one, under twenty-one years of age, who by reason of congenital or acquired defects of development, disease or wound, is, or may be reasonably expected to become, deficient in the use of his body or limbs (an orthopedic cripple) including hare lip, cleft palate, and some other handicaps yielding to plastic surgery, and excluding physical difficulties wholly of sight, hearing, or speech, and those affecting the heart primarily, and also excluding serious mental or moral abnormalities unless found in conjunction with orthopedic defects.

NOTE: In the working organization of the White House Conference, the study of the social and educational problems presented by orthopedic crippled children was originally allocated to two subcommittees in two different sections—the Subcommittee on the Crippled, in Section IV B, and the Subcommittee on the Crippled, in Section III F.

In order to facilitate the work, plans were made to coordinate the efforts of the two groups. Their task was to assemble information already available and from that information to determine what is being done for crippled children in the United States and to deduce what should be done for a decade and how to do it. On these facts, the reports given in *Special Education* and in this volume were based.

This definition was suggested to the Committee on Physically and Mentally Handicapped for consideration.

In order to differentiate between children who need special educational facilities and those who do not, the following definition has been adopted by the Committee on Special Classes:

- A child eligible to attend a special class for crippled children is one who, by reason of congenital or acquired defects of development, disease, or accident, is, or may be expected to become, deficient in the use of body or limbs—an orthopedic cripple, who cannot attend the regular school classes with safety and profit during the period of physical rehabilitation, mental training and social adjustment
- A child for whom physicians or surgeons have recommended the daily care of nurses or physiotherapists
- A child who must have transportation service to reach school
- A child who needs specialized attention in vocational guidance, training, and placement
- A child handicapped by cardiac complications
- A child who requires plastic surgery (for hare lip or cleft palate) usually followed by muscle training or speech training.

EXTENT AND NATURE OF THE PROBLEM^{1*}

Since a crippled child is first and foremost a child with all the physical, mental, emotional, and social needs of any child, any one who seeks to solve his problems from a more limited point of view is doomed to failure. He becomes a problem child when his primary handicap, which is his physical condition, makes it impossible for him to compete on equal terms with his fellows in society which is organized for the normal individual. Given equal opportunity, crippled children are meeting the challenge of life and are proving

* Superior figures in text refer to references at end of section.

that when educated and trained, they become assets in any community, as emotionally stable and as financially successful as the average citizen.

The problem of the crippled child is four-fold: finding him; curing him—in a relative sense; educating him; placing him in society where he can make his best contribution.

In every community there are crippled children who should be located by some process of continuous survey, the results of which should be recorded by some system of central registration.

Since the ratios of crippled children for each thousand of the general population most frequently quoted have been derived from the findings of state-wide and local community surveys covering a period of twenty-five years, one of the projects of the Joint Committee on the Crippled Child was a consideration of the nature, method, and extent of the surveys from which these ratios have been taken. A further attempt was made to test the feasibility of estimating the number of crippled children in a given community through applying a flat ratio, by comparing the number of children so estimated with the numbers actually located in states and local communities representing as widely varying conditions with regard to density and character of population, age of settlement, climate, and incidence of epidemics, as may be found in the country as a whole.

Distribution of Crippled Children

Sex. The distribution of crippled children as to sex is important chiefly in its bearing upon questions of vocational training and employment. Statistics relating to adult cripples show a marked preponderance of males, but this does not hold true for children, the percentages for boys and girls running very close in all the studies.

Out of a total of 936 children studied in the Cleveland survey,² 515 or 55 per cent were boys, 421 or 45 per cent, girls. In the total of 196 children between six and sixteen studied in the New York City survey,⁷ 102 or 52 per cent

were boys. In a group of 196 children under care in orthopedic hospitals at the time of the New York State survey,⁴ 55 per cent were boys. In Chicago,¹⁴ 53 per cent of the group studied were boys, and the same percentage is reported from the four counties studied in Wisconsin.¹⁵

Race and Nationality. Little information is available relating to race or nationality. In the Cleveland survey 97 per cent of the cripples reported were white; in Chicago, 93 per cent.

In the preliminary survey of cripples made by the Philadelphia Hospital and Health Survey Committee in 1929,¹² a house-to-house canvass of one hundred blocks located 54 crippled children—birth to twenty-one years; 8 of these were colored; one was under five years; 6 were between six and sixteen.

The Cleveland report, which contains the only data relating to nationality, states that 68 per cent of the cripples studied were native born, and that "the proportion of foreign born of the different nationalities seems, on the whole, to be in keeping with the numerical distribution of these nationalities in the general population of Cleveland."²

Distribution by Age Groups

Figures in Table 1, taken from the published reports, indicate the relative numbers of children found in the pre-school, elementary and vocational age groups. In the Cleveland and New York City studies, the enumeration included cripples of all ages, while the New York State, New Jersey,⁵ and Chicago studies were confined to persons of eighteen or twenty-one years of age and under.

The New York and New Jersey State studies showed wide variations in the ratios in the different communities of practically the same population. (Tables 2 and 3.)

The reports on this subject from the several states indicate that continued study in various communities shows an elevation in this ratio of the number of children in the school population. In Broome County, New York, where the work

TABLE 1
NUMBER OF CRIPPLED CHILDREN IN EACH AGE GROUP

Study	Age groups	Number of children	Per cent	Ratio per 1,000 general population
Cleveland (4,186)	Under 5	165	4	.24
	5 to 14	771	18	1.11
	15 to 19	301	7	.44
	Birth to 19	1,237	29	1.83 ^a
New York City (727)	Under 5	169	23.2	1.59
	5 to 15	204	28.1	1.92
	15 to 19	46	0.63	0.43
	Birth to 19	419	51.93	3.94 ^b
Chicago (4,609)	Under 6	841	18.2	Population data not given
	6 to 15	3,174	69.2	
	16 to 21	594	12.0	
	Birth to 21	4,609	100.0	^c
New York State (6,579) ^d	Under 7	782	12	0.16
	7 to 14	3,476	53	0.72
	14 to 16	716	10	0.15
	16 to 18	747	11	0.156
	Birth to 18	5,721	86	1.20 (Estimated)
	Unknown	870	14	
	Total	6,591 (6,579) ^e	100	1.38 ^f
New Jersey (10,019)	4 and under	1,340	13.3	0.36
	5 and 6	850	8.4	0.25
	7 to 13	4,410		1.17
	14 and 15	1,210	5.6	0.32
	16, 17, and 18	1,240	12.3	0.326
	Total	9,050	39.6	2.396
	Not stated	969	11	
	Total	10,019	50.6	2.596 ^g

^a *Cleveland Report*, Table 1, p. 22. Includes rachitic cases.

^b *Survey of Cripples in New York City*, Table, p. 28.

^c *Crippled Children in Chicago*, p. 14.

^d *New York State Survey*, Table II, p. 20.

^e Total given in table.

^f *Ibid.*, p. 27.

^g *New Jersey Survey*, Table I, p. 10.

has been carefully checked for a period of over ten years, the total number of crippled children reported approximates 12 or 15 per 1,000 of the population under eighteen years. These figures, given in a letter dated February 26, 1930, from the chief of the State Crippled Children's Bureau, include children with some minor orthopedic defects.

In New Jersey, intensive studies carried on by the Temporary Commission over a period of three years has confirmed the variations for different communities shown in the early report. In Camden, with a school population of 57,388, the ratio was 3.40; in Trenton, with a school population of 52,344, the ratio was 11.23; in Dover and Nutley with school populations of 4,289 and 4,628, the ratios were 3.49 and 11.37 respectively. This information was given by

TABLE 2

RATIO OF CRIPPLED CHILDREN IN SCHOOL POPULATION AS SHOWN BY
NEW YORK STATE SURVEY

Area		Population	Population under 18	Number crippled children per 1,000 population under 18
Counties not including cities ^a	Nassau.....	76,276	27,826	3.74
	Suffolk.....	91,522	27,663	4.02
	Cattaraugus..	41,541	14,226	10.65
	Delaware.....	42,774	14,327	1.19
	Wayne.....	41,863	13,244	3.10
	Cortland.....	16,331	5,192	3.52
	Orleans.....	17,925	4,847	2.41
	Tioga.....	14,795	4,549	5.20
Cities and villages ^b	Buffalo.....	506,775	173,988	4.04
	Syracuse.....	171,717	53,497	8.12
	Binghamton...	66,800	18,917	12.06
	Troy.....	58,013	20,909	3.14
	Auburn.....	36,192	10,856	9.72
	Jamestown....	38,917	12,333	4.22
	Hornell.....	15,025	4,459	3.82
	Geneva.....	14,648	4,759	9.89
	Albion.....	4,683	1,735	16.70
	Fairport.....	5,626	1,623	1.23
	Bay Shore.....	800	266	18.70

^a *New York State Report*, p. 18.

^b *Ibid.*, p. 22.

the Chairman of the New Jersey Crippled Children's Commission, March 3, 1930.

The Michigan study of a school population of approximately eight thousand located 207 crippled children, a ratio of 26 per 1,000, according to a letter dated February 25, 1930, from the Secretary of the Michigan Crippled Children's Commission. This includes cardiopathic cases.

Preschool. One of the most striking facts recorded in the Chicago survey was that an analysis of the onset of crippling conditions in 1,531 cases showed that 83 per cent of the cripples under twenty-one years of age were crippled under the age of six years, and that "it is evident that the agencies which have contact with the preschool child have the greatest responsibility for doing preventive work with cripples of the future. If their work in finding the crippled child and getting him under care early can be made more effective, it will greatly modify the work of all other organizations." ¹⁴ Sev-

TABLE 3

RATIO OF CRIPPLED CHILDREN IN SCHOOL POPULATION AS SHOWN BY
NEW JERSEY STUDY

Area		Population	Population under 18	Number crippled children per 1,000 population under 18
Counties ^a	Bergen.....	293,826	113,098	5.86
	Passaic.....	298,050	112,908	7.98
	Gloucester.....	58,713	20,962	3.48
	Somerset.....	56,486	20,988	6.86
	Cape May.....	19,460	6,561	8.38
	Sussex.....	24,905	8,760	3.76
Cities, town- ships and boroughs, 10,000 and over ^b	Elizabeth.....	117,679	36,771	15.11
	Paterson.....	144,232	50,785	8.38
	East Orange...	63,774	18,169	16.67
	Hoboken.....	68,166	24,512	4.36
Places of 2,500 to 10,000 ^c	Burlington.....	9,626	3,362	7.13
	Fairview.....	8,544	4,043	2.96
	Pitman.....	4,251	1,525	7.86
	Merchantville..	3,526	1,014	9.99

^a *New Jersey Report*, p. 10.^b *Ibid.*, p. 11.^c *Ibid.*, p. 13.

enty-nine per cent of 479 children discovered in the study made by the Wisconsin Association for the Disabled were crippled before the age of seven years.¹⁵

A study of the prevalence of crippled conditions among infants and preschool children examined in the Health Centers of the Division of Child Hygiene, Philadelphia, undertaken in connection with the Hospital and Health Survey in 1929 reports:

Of the 36,842 babies born in Philadelphia in 1928, 14,420 or 39 per cent had been examined in Health Centers. Of these, 36, or 2.5 per 1,000 examined had congenital defects of the type that would class them as orthopedic cripples. The usual ratio of cripples for children under eighteen years of age is 7 to 7.5 per 1,000. About 25 per cent of these or 1.9 per 1,000 are usually found to be congenital. The slightly higher ratio of 2.5 per 1,000 as compared with 1.9 is probably due to three factors:

In the number examined in Philadelphia every cripple was located
A number will be cured and thus eliminated from the groups of
older children

A small proportion of the congenital cripples may die in early years of life.

Preschool children studied were of the same economic and social status as infants examined, but from the standpoint of health were a more selected group, as it is the policy of the bureau of child hygiene to drop from supervision well infants at the end of the first year of life and to continue under care only children needing supervision for some defect or illness. This, however, is only a partial answer to the much higher incidence of crippled conditions among this group. This study included the last 5,696 children of preschool age examined in the health centers and showed that 115 children had a total of 130 congenital or accidental deformities.

Deformities such as hare-lip, and so forth	21
Children with orthopedic defects	109

Of the latter, 45 were definitely orthopedic cripples. In 64 cases the diagnosis was such that children may or may not have been crippled—depending on the severity of the defect. These included genu valgum, 21; genu verum, 26; flat foot, 8; scoliosis, 5; lordosis, 4. All required orthopedic care. It is safe to assume from the diagnosis that 32 or 50 per cent of this latter group have defects sufficiently severe to class them as cripples in the usual understanding of the term. This would mean that 77 children, or 13.9 per 1,000 in the preschool age were found crippled.

It is interesting to note how this ratio compares with that found elsewhere in general cripple surveys, especially since this is the first time that a complete study has been made of a large number of children of the preschool age group. The usual ratio, as mentioned before, for children of all ages is 7 to 7.5 per 1,000 population under eighteen. The ratio found in the study is almost twice as high. This may be due to:

- The fact that every child in the group was found
- About 50 per cent of these children may be cured by early treatment and thus eliminated from later statistics
- The great increase in the ratio from 2.5 per 1,000 in the newborn group to 13.9 per 1,000 in the pre-school group is striking commentary on the fact that cripples resulting from disease, accidents or lack of care greatly outnumber those from congenital causes.

Elementary: Ratio of Crippled Children in School Population. Very little study has been given to the ratio of crippled

children in the school population. Statistics in the New York State report show the ratio of crippled children to the population under eighteen was 3.14 per 1,000; for the total of counties including cities the ratio was 4.90. No figures are given for the total of cities and villages. Very wide variations in these ratios for different communities with practically the same school population appear in the tables.

An interesting sidelight on the study out of which these ratios were taken is shown in the report of the intensive survey made for the commission ⁴ in Auburn, New York. Seventy-two cases were reported before the recheck was started. As a result of the extra local efforts made when it was announced Auburn had been chosen for intensive study, this number was raised to 82. Through the efforts of the new and enlarged survey committee, 13 more crippled children were found. The final joint efforts of the special representative and the school nurse raised the total and final number to 106.⁴ Probably if all communities could have been as thoroughly surveyed, there would be less variation in the reports in New York State. More recent studies indicate that no amount of search by trained investigators can gainsay the fact that variations of significance do exist. Dependable figures cannot be secured from ratios when real accuracy is demanded.

Analysis of Figures from Published Reports

*Massachusetts State Census, 1905.*¹³ Massachusetts was the first commonwealth in this country to undertake an enumeration of cripples in connection with the state census. In 1905, the census enumerators were asked to list "the lame, maimed and deformed"—the word "maimed" including the loss of an eye and other minor defects. The ratio of "crippled persons" resulting from the enumeration under this definition was 5.7 per 1,000 total population.

*Cleveland Survey, 1915 to 1916.*² The next survey of importance was that of Cleveland, Ohio, the first city-wide census of cripples made in this country. In a house-to-house canvass made between October, 1915, and October, 1916, covering 150,000 families, 4,186 persons were reported by

themselves or by their families as "physically handicapped by defects of skeleton or skeletal muscles." One of the most valuable points cited in the report of the Cleveland survey was the distinction made between this definition of "cripple," which was actually used as a working basis by the Cleveland committee, and the definition adopted at the start, which was practically the same as that used in the census of cripples made in Birmingham, England, in 1910³ "A person whose (muscular) movements are so far restricted by accident or disease as to affect his capacity for self-support." * Since the estimated population of Cleveland in 1916 was 674,073, and the number of cripples of all ages recorded in the survey was 4,186, the ratio was 6 cripples per 1,000 general population. Of the total number, 29 per cent or 1,237 were under twenty years of age—the ratio for the group being 1.83 per 1,000 general population. The ratio for children under fifteen years was 1.35 per 1,000.

These earlier surveys were made before there had been any known or recorded severe epidemics of infantile paralysis in the United States. The Cleveland report calls attention to the fact that Cleveland had not recognized epidemics of infantile paralysis.†

*New York City Survey, 1920.*⁷ Made in 1920, this is comparable to the Cleveland survey in that the method employed was a house-to-house canvass in six districts selected as representative, and in that the definition used as

* The Birmingham Survey (England) in 1910 was made by circularizing the clergy, surgeons, orthopedic hospitals, the C. O. S., City Aid Society, the Guardians, Police Society and Women's Settlement. In a population of 525,860, 728 children under sixteen years of age were located, a ratio of 1.38 per 1,000 general population. (Rubinow, I. M., *Report of a Special Subcommittee of Enquiry Concerning Physically Defective Adults and Children*, City of Birmingham Education Committee, October 27, 1911.)

† The correspondence between the figures derived from the Massachusetts and Cleveland surveys and those found by surveys made in Germany and England at almost corresponding dates is noteworthy. A census undertaken by the German government in 1906 discovered that the total number of cripples under sixteen years of age in a total population of 50,897,000 on December 1, 1905, was 75,183, or 1.48 per 1,000 general population. (Biesalski, K. *Umfang und Art des jugendlichen Krüppeltums, und des Krüppelsfürsorge in Deutschland*, Leipzig, 1919. Cit. in Rubinow, I. M., "A Statistical Consideration of the Number of Men Crippled in War and Disabled in Industry," *American Journal of Care for Cripples*, Vol. 7, 1918, p. 90.)

a basis of the survey was practically the same as that used in Cleveland: "Those handicapped by some limited or distorted use of muscles, joints, or skeletal members." Since the number of crippled persons of all ages discovered was 727, and the estimated population for the six districts covered was 106,192, the ratio was 6.9 cripples of all ages per 1,000 population. Of this total number, 419 or 56.2 per cent were under twenty years of age, the ratio for this group being 3.94 per 1,000 general population.

*Chicago Survey, 1924.*¹⁴ In making the Chicago survey, May to December, 1924, the survey committee confined its efforts to the study of crippled persons under twenty-one years of age, using the definition, "a person whose muscular movements are restricted by disease, accident, or congenital deformities." The total number of cripples located was 4,609, while the number estimated by the committee on the basis of findings in Cleveland and New York City had been 5,200.* Since this survey was made through the help of hospitals and dispensaries, public health agencies, schools, vocational organizations, settlements and day nurseries, and other similar sources, a large number of the children located were already under care. A house-to-house canvass of certain typical areas, covering 33 square blocks, made as a check on the possible number of children not under care, discovered only 6 additional children in these areas, showing that the number of children missed by the survey method used was relatively small.

New York State Survey, 1924. New York State undertook the first state-wide survey of the needs of crippled children—the study covering the entire state, outside the City of New York. (The Massachusetts survey in 1905 was a mere enumeration.) The definition used was "A crippled child is one whose activity is, or due to progressive disease, may become, so far restricted by loss, defect or deformity

* By using the ratio of 6 cripples per 1,000 general population, the Committee estimated 17,500 crippled persons of all ages in Chicago, and 30 per cent—the proportion under twenty-one years of age according to Cleveland findings—as representing the number under twenty-one years of age. *A Community Trust Survey of Crippled Children in Chicago, May-Dec., 1924, p. 15.*

of bones or muscles, as to reduce his normal capacity for education or for self-support."

On the assumption that cripples of school age would be reported in the schools and that those of preschool age would be known by children attending schools, this survey was conducted through school systems, public, private, and parochial.⁴ In making the state survey, cards were distributed on the basis of the ratio of crippled children found in New York City, checked by the ratio found in Cleveland, excluding rachitic children. The resulting ratio was 2.5 crippled children under eighteen years of age per 1,000 general population.

The findings of the New York State study for different types of communities are shown in Table 4.

TABLE 4
FINDINGS OF NEW YORK STATE SURVEY

	Population	Number crippled children reported	Ratio per 1,000 general population
Total counties including cities. . . .	4,765,179	6,579	1.38
Total counties not including cities. .	1,933,058	2,033	1.05
Total cities.	2,839,324	4,614	1.62

In Table 5 the totals of Table 4 are adjusted on the basis of findings in selected communities where intensive surveys were made, and an estimate made to show the probable number of children outside institutions.

TABLE 5
ADJUSTED TOTALS OF TABLE 4

	Number children reported	Number per 1,000	Number per 1,000 adjusted	Total estimate, cripples
Total counties including cities. .	6,579	1.38	3.00	14,295

By adding a conservative estimate of 3,000 children in institutions, a total of 17,248 was reached; adding to this 19,000, the estimated number in New York City, brought the total for the state to 36,248. Considering that some of these were not seriously handicapped, a conservative statement of the numbers of crippled children involving problems

not common to the normal child was 30,000 for the whole state.⁴

Statistics relating to distribution of crippled children in cities and villages show wide variations in ratios for different communities in the same population groups. In three cities of between ten and eleven thousand population the ratios for crippled children were 2.18, 2.47 and .10. In three other cities of between thirty-five and thirty-seven thousand, ratios were 2.98, 1.79 and .91. In three cities of between forty-six and forty-seven hundred population, the ratios were 6.19, .64 and .43.

New Jersey Survey, 1927. The only other published report of a state-wide survey of crippled children is that made by the New Jersey Temporary Commission in 1927. This is comparable to the New York State Survey of 1924 to 1925 in that the commission undertook "a census of crippled children between birth and eighteen years of age which should be both numerical and qualifying," the definition including all children "whose activity is, or due to a progressive disease, may become, so far restricted by loss, defect or deformity of bones or muscles, as to reduce normal capacity for education and self-support."

Census cards to the number of 35,000 were furnished to public, parochial, and private schools. Physicians, the clergy, insurance companies, service, fraternal and benevolent organizations, educational and social groups, motion picture theater managers, health organizations, and others were enlisted to secure data relating to children under school age, and those no longer attending school. The total number of children, from birth to eighteen years of age, recorded, was 10,019. The number of children previously estimated in New Jersey on the basis of ratios resulting from earlier studies was 9,405.⁵ The total state population estimated to date was 3,762,817. This gives a ratio of 2.68 crippled children per 1,000 general population. The commission attributed this comparatively high ratio to the fact that as a result of activities carried on by the Elks and because New Jersey⁵ as well as New York⁵ had been one of

the epidemic states during the prevalence of infantile paralysis in 1916, the public was already educated and actively thinking on the subject of the needs of crippled children.

As a basis for determining local vocational and educational needs, the New Jersey Commission has given tables showing the distribution of crippled children in different cities and counties of the state.

Table 6 shows as wide variations in ratios for cities of relatively the same population in the New Jersey figures as in those for New York State.

TABLE 6
VARIATIONS IN RATIOS OF CRIPPLED CHILDREN IN CITIES OF
NEW JERSEY ^a

City	Population	Ratio per 1,000 population
Camden.....	133,725	1.72
Paterson.....	144,232	2.95
Trenton.....	137,365	4.37
Orange.....	36,337	9.79
Irvington.....	37,428	1.70
Clifton.....	39,116	3.57
New Brunswick.....	40,291	4.34
Bordentown.....	4,463	1.79
East Paterson.....	4,500	4.88
Palmyra.....	4,660	.64

^a *Report of New Jersey Temporary Commission, Tables II and XI, pp. 11-16.*

As is indicated by the use of ratios discovered through earlier studies in making preliminary estimates in connection with the surveys under consideration, there has been set up what may be termed a *standard ratio* of approximately 2.5 per 1,000 general population for children from birth to eighteen years of age. There has also been a tendency in many communities to use the approach to the preliminary estimate based on this ratio as a measure of the thoroughness of the survey. The dangers in this use of estimates becomes apparent when consideration is given to all the factors of definition, method and objective of the study, training and experience of the staff of enumerators, on the one hand, and density and character of population, health organization of the community, and incidence of epidemics on the other.

Study by Joint Subcommittee, 1930. In its attempt to

study further the feasibility of applying a standard ratio for crippled children to the country as a whole, or even to states and local communities which might be considered typical, an inquiry was sent to public and private agencies in the different states and in local communities asking for the estimated number of crippled children, and for any statistics available on the number of children in relation to the general population actually located through official and other enumerations, clinic records, or any other methods of finding.

According to estimates based on assumed ratios or the so-called standard ratio and the 1920 Census, there were 289,919 crippled children in the United States in that year. The Subcommittee findings showed that, according to estimates based on the same ratio but on the 1930 Census, the estimated number is 304,541, an increase of 14,622. The findings also showed that in many states the work of estimating the number of crippled children and the attempt to locate them is just starting, and that the totals do not give the actual number of crippled children in the United States. Undoubtedly, also, there is considerable work being done along this line in places which did not send in reports.

As the study progressed, it seemed certain that 2.5 was a conservative estimated standard ratio. Ratios actually found in the various studies range as follows:

Year	City	Age	Ratio per 1,000 general population
1915-1916	Cleveland.....	Birth to 19	1.83
1920	New York City.....	Under 20	3.94
1924	New York State, outside of New York City.....	Birth to 18	1.38-3.00 adjusted
1927	New Jersey.....	Birth to 18	2.68
1925-1926	Michigan Society for Crippled Children.....	6 to 20	2.00

While these ratios may serve as a guide, they do not give an adequate picture of variations such as the following: ratios per 1,000 of cities and towns in New York State vary from .10 to 6.19; in cities and counties in New Jersey from .16 to 9.76. These do not include cardiacs.¹ For this reason there is also included here an estimated total using 3 per 1,000 population or 365,407. (Table 7.)

TABLE 7

ESTIMATED NUMBER OF CRIPPLED CHILDREN IN THE UNITED STATES
USING A RATIO OF 3 PER 1,000 GENERAL POPULATION. 1930 CENSUS.

State	Population	Number crippled children
Alabama.....	2,646,248	7,938
Arizona.....	435,573	1,305
Arkansas.....	1,854,482	5,562
California.....	5,677,251	17,031
Colorado.....	1,035,791	3,105
Connecticut.....	1,606,903	4,818
Delaware.....	238,380	714
District of Columbia.....	486,869	1,358
Florida.....	1,468,211	4,304
Georgia.....	2,908,506	8,724
Idaho.....	445,032	1,335
Illinois.....	7,630,654	22,890
Indiana.....	3,238,503	9,714
Iowa.....	2,470,939	7,410
Kansas.....	1,880,999	5,640
Kentucky.....	2,614,589	7,842
Louisiana.....	2,101,593	6,303
Maine.....	797,423	2,391
Maryland.....	1,631,526	4,893
Massachusetts.....	4,249,614	12,747
Michigan.....	4,842,325	14,526
Minnesota.....	2,563,953	7,689
Mississippi.....	2,009,821	6,027
Missouri.....	3,629,367	10,887
Montana.....	537,606	1,611
Nebraska.....	1,377,963	5,131
Nevada.....	91,058	273
New Hampshire.....	465,293	1,395
New Jersey.....	4,041,334	12,123
New Mexico.....	423,317	1,269
New York.....	12,588,066	37,764
North Carolina.....	3,170,276	9,510
North Dakota.....	680,845	2,040
Ohio.....	6,646,697	19,938
Oklahoma.....	2,396,040	7,188
Oregon.....	953,786	2,859
Pennsylvania.....	9,631,350	28,893
Rhode Island.....	687,497	1,461
South Carolina.....	1,738,765	5,214
South Dakota.....	692,849	2,076
Tennessee.....	2,616,556	7,848
Texas.....	5,824,715	17,472
Utah.....	507,847	1,521
Vermont.....	359,611	1,177
Virginia.....	2,421,851	7,263
Washington.....	1,563,396	4,689
West Virginia.....	1,729,205	5,187
Wisconsin.....	2,939,006	8,817
Wyoming.....	225,565	675
United States— <i>Total</i> ,.....	122,775,046	368,325

Summary of Analyses. The detailed information from which these returns were taken indicates considerable variations in the ratios for communities of practically the same population, geographic situation, and economic condition.

In *New Jersey*, continued intensive study of several communities has served to confirm findings of the original survey. Camden, with a population of 140,385, reported 175 crippled children, a ratio of 1.24 per 1,000; Dover with a population of 12,556, 15 children, a ratio of 1.19; while Nutley, with a population of 12,492, reported 64 children, a ratio of 5.10 per 1,000. The Chairman of the New Jersey State Temporary Commission Report, in submitting these figures says that the population data is from the 1920 Census, adjusted to date. The number of crippled children was obtained by direct contact investigation of all cases.

In *Michigan*, nurses conducting a school examination in two counties found 9.2 cripples under twenty-one years of age per 1,000 of the general population in one, and 11.3 in the other county. These were all cases listed in a letter dated February 25, 1930, from the Secretary of the Michigan Crippled Children Commission as being definitely in need of diagnostic clinical examination.

Records from *Pennsylvania* show that in four counties, with populations of 217,750, 83,923, 39,000 and 37,000, the ratios were 2.4, 3.5, 8.3, and 7.6 respectively.⁶

In *Missouri*, the ratio for Jackson County, with a population of 398,244 was 1.9; for Pettis County with a population of 36,496 but where intensive work has been carried on, the ratio was 3.8.

While the variations in number of crippled children in proportion to population must be attributed in part to differences in types of disability included in the country, in part to different methods and type of leadership in making the study and in part to other governing factors, there still remains the noteworthy fact that variations in the figures from surveys in different communities in the same state, where it may be presumed that definition and method did not vary materially, are as wide as in those from state to state, where differences in types are included.

Considering all these variations, it may be that from a state-wide standpoint the results obtained by estimating cripples in a ratio of 2.5 are not far wrong, and will serve at least as a working basis until more exact figures are scientifically established by actual enumeration. Certainly, these findings indicate that the problem of the discovery of every crippled child is a challenge to the social resources of any community, and that the assumption that there are not enough children in a given community to warrant the provision of special facilities for care and education on the basis of findings in other similar communities is unfounded.

Regardless of their incompleteness, the reports are encouraging in that they reflect an aroused public interest and sustained efforts on the part of private and public agencies and lay groups even in the face of great odds due to the experimental nature of the undertaking, inexperience of workers, and lack of funds. Letters accompanying the reports indicate that in many places only a small proportion of the total number of crippled children have secured any kind of service, and in terms of the whole round of services of which most of these children stand in need, the percentage is pitifully small.

CAUSES OF CRIPPLING

In analyzing the statistics relating to the causes producing crippled conditions from the findings of the New York State survey, the Cleveland and New York City surveys and the records of many orthopedic hospitals, the New York State Commission found that three diseases—infantile paralysis, bone tuberculosis, and rachitis—together with congenital deformities, which are most likely to affect very young children, accounted for 74 per cent of crippling conditions.⁷

The New Jersey Commission found that infantile paralysis was the cause of crippling in over one-third of the cases recorded; diseases or accidents at birth in over one-fourth of the total cases; while bone tuberculosis represented only a small proportion. The proportion due to infantile paralysis

is attributed to the epidemic in 1916; that for bone tuberculosis to the fact that tabulation did not include children in institutions.⁵

Classification of the main causes of disability with percentage distribution reported from 57 public and private day class teaching centers in 47 cities in 14 states is as follows:

Causes	Per cent
Infantile paralysis.....	33.7
Bone tuberculosis.....	12.6
Spastic paralysis.....	14
Congenital.....	10
Cardiac ^a	8
Accidents.....	6
Other.....	16

^a The low percentage of cardiacs is due to the fact that some of these cities do not include cardiacs. In schools that do enrol them the percentage is about 15 and statistics from these schools show that the large percentage of cardiac children enrolled in the special classes for crippled children fall within Class II-A and Class II-B, *American Cardiac Association Classification*. In Chicago, where cardiac children have been afforded education in classes with orthopedic children for the past ten years, the plan has been endorsed by the Chicago Heart Association, and medical treatment provided by them.

In addition, figures from other sources have been studied in so far as possible. The results of these studies are tabulated in Table 8.

NOTES TO TABLE 8

^a *Cleveland Survey*, p. 38. Statistics of causes among 936 children, show that a confirmed medical diagnosis was secured for 58 per cent of all these cases. "Other diseases in order of frequency of occurrence were spastic paralysis, scoliosis, osteomyelitis, paralysis—obstetrical and other—spinal meningitis, rachitis, spina bifida with hydrocephalis, and unclassified diseases."

^b *New York City Survey*, p. 46. Statistics of causes in 727 cases of all ages. Other causes in order of frequency of occurrence were: traumatic, 23 per cent; rachitis, 21 per cent; amputations, 9.5 per cent; arthritis, 3.4 per cent; pyogenic, 1.3 per cent; syphilis, 1.0 per cent.

^c *Chicago Survey*, p. 18. Findings in 1,531 cases. Amputations, osteomyelitis, muscular dystrophy and other conditions are included under "other."

^d *New York State Survey*, p. 43. Classification of diseases with accompanying percentages, compiled from statistics of surveys made in New York State, New York City, and Cleveland, Ohio, and also from the records of many orthopedic hospitals. Other causes included: rachitic deformities, 7 per cent; traumatic conditions, 5 per cent; osteomyelitis, 4 per cent.

^e *New Jersey Survey*, p. 20. Percentages are compiled from Table 4, p. 20. Relates to conditions among 5,707 children from birth to 18 years of age. x—Traffic, other.

^f *Educating Crippled Children in Ohio*, by Hazel Hadley, p. 60. A study of crippling conditions of 886 pupils enrolled in special classes for crippled children throughout Ohio. The diagnosis given is by an orthopedist in each case.

^g *Care and Education of Crippled Children and Adults*, by Marguerite Lison, p. 29. Wisconsin Association for the Disabled. Study of 479 cases of all ages in four counties. x—including osteomyelitis.

^h *Report Philadelphia Hospital and Health Survey Committee 1929*, p. 322.

ⁱ The percentages derived from the questionnaires on hospital homes are taken from a goodly number of returns, but those for convalescent institutions from only 8 institutions giving full reports. Those for schools were derived from 57 public and private day class teaching centers in 47 cities in 14 states.

Note: Abt, H. E., *The Care, Cure, and Education of the Crippled Child*, pp. 11-14, for a similar study made in 1924

TABLE 8
CAUSES OF CRIPPLING

Disease	Cleveland 1915- 1916	New York City 1920 <i>b</i>	Chicago 1924 <i>c</i>	New York State 1924- 1925 <i>d</i>	New Jersey 1927 <i>e</i>	Ohio 1927 <i>f</i>	Wisconsin 1928 <i>g</i>	Philadelphia 1929 <i>h</i>				Report of White House Conference Joint Subcommittee on Crippled Child, 1930 <i>i</i>			
								White	Negro	Hospital homes	Conva- lescent institu- tions	Public and private schools	Average		
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Infantile paralysis	41	16.5	51	30	37	36.7	32	15.5	15.5	24.4	59.5	33.5	30.1		
Bone tuberculosis	15	4.7	7	25	.032	16.9	10x	5.8	2.0	10.5	10.7	12.5	8.5		
Spastic paralysis	.....	.....	16	.....	.....	8.5	14.5	.....	.....	8	5.8	14	7		
Congenital	16	8.0	10	12	26	8.5	21	21.3	6.6	14.4	9.5	10	13.8		
Cardiac	.....	.....	.....	.....	.....	8.4	.....	.....	.....	7.1	.....	8	2.5		
Accidents	9	.....	.....	.....	{ .03x }	.....	6	35.9	51.1	5.5	.4	6	17.4		
Other	16	59.2	16	33	10.5	21	14	23.2	24.2	30	13	16	20		
Not stated	3	1.7	.....	.....	10.5	.....	2.5	.....	.....	.....	.....	.....	.....
Total	100	100	100	100	98	100	100	100	99.4	99.9	98.9	100	99.3		

CARE AND TREATMENT

Aim and Procedure

The aim of the social and educational program for crippled children is threefold:

- To give every child the best physical condition it is possible for him to attain
- To give him the best education it is possible for him to assimilate
- To help him to find his place for service in the world's work.

These do not differ from the accepted standards in the health and educational programs for normal children, for whom training and education of mind and body go hand in hand, but to attain them for crippled children involves specialized services all along the line.

Charles Prosser ⁸ says:

There cannot be any real equality of opportunity for the crippled child until he has received the full benefit of every kind of constructive service which will put him on a level so far as this is possible with the normal child. And there cannot be real equality of opportunity among the crippled children themselves of this nation until every one of them receives the whole round of constructive services he needs to set his feet "on the road to somewhere."

The article also develops fifteen points to show how the state and private agencies can bring about this equality of opportunity. "Such a program is shrewd social economy . . . true social justice . . . the deepest social wisdom . . . the truest expression of the Spirit of America." ⁸

For many children, early discovery of the potentially crippling disease or condition and prompt medical and surgical care will mean the complete removal of the physical handicap and restoration to the ranks of normal children. For others even early and efficient medical and surgical services cannot completely restore normal functioning. For these children, follow-up services and help must be afforded.

The waste entailed by orthopedic surgery without after-care, including education and placement, is one of the tragic notes in the story of crippled children.

Physical Care. A great deal of convalescent and after-care can be provided in schools for crippled children. The physical care of children in special classes is the responsibility of their physicians and surgeons. Physiotherapy has come to be regarded as an important phase of this care. Thirty-five of the 47 cities and counties replying to this inquiry in the questionnaire sent out by the White House Conference Subcommittee on Special Classes for Crippled Children report physiotherapy as part of the child's daily routine at school. Several give lack of trained physiotherapists as the reason for its omission; several, financial stringency; and others that the children receive treatment in the private offices of their physicians or in local hospitals. In smaller communities where no physiotherapist is available, the regular physical education teacher, directed by the physician or surgeon, gives the corrective work.

In a well organized school, physiotherapy includes muscle training (both in and out of water), massage, corrective exercises, general gymnasium work, directed rest and recreation, ultraviolet and infrared treatments, surgical dressings, coordination of classroom and shop activities with physical improvement, supervision of feeding, rest, and general health, and every kind of social service. The diagnosis of selected groups will reveal the breadth of this side of the work.

Care in Foster Homes. Parker B. Field,^{9, 10} General Secretary, The Children's Mission, Boston, describes the care of crippled children from the Massachusetts General Hospital in foster family homes:

This is a completely decentralized plan of convalescent care. A seven passenger sedan, with enough room for a recumbent child strapped to a frame, is used to transport the children. A visitor of the mission accompanies the child to the hospital in order to give proper instructions to the foster mother. These family homes do not take more than five children at a time and are paid from seven to ten

dollars a week for the board of the children. One of the foster mothers is a skilled masseuse. Two homes maintaining trained nurse service take as high as ten children each. . . . Why not give the child the family life accorded to the normal child? This has been done for the past fifteen years by the Children's Mission. . . .

Monographs Presented at Conference

Orthopedic Surgery. Orthopedic surgery began in preventive medicine in 1741 through the work of Nicholas Andry of Paris. In his monograph on *Orthopedic Surgery as a Specialty*, Robert B. Osgood says:

This should perhaps continue to be the chief aim of the orthopedic specialty, though inevitably its scope has widened to embrace the prevention and correction of "crookedness" in adults as well. . . . The definition of the term, *Body Mechanics*, which has been accepted by the Committee on Medical Care for Children of the White House Conference is as follows: "Body mechanics is the mechanical correlation of the various systems of the body with special reference to the skeletal, muscular, and visceral systems. Normal body mechanics obtains when this mechanical correlation is most favorable to the function of these systems."¹¹ . . . It seems to require peculiar sustained interest and specialized skill to combat successfully these crippling conditions involving the principles of body mechanics. Gradually but increasingly the medical profession is asking the specialty of orthopedic surgery to accept the responsibility of preventing and treating this class of disorders which, unchecked, present to us the problem of the crippled child. . . .

Cerebral Palsy. Bronson Crothers who presented a monograph to the Subcommittee on this subject, says:

Any motor disturbance dependent upon injury, disease or development defect of the brain is frequently called a cerebral palsy. Through common usage this term has become accepted although it is clear that many of the cases are not paralyzed in any strict sense of the word. As a matter of common usage again, the term is largely confined to cases where the cause of disease occurs early in life and is not progressive. . . . The problem can be handled and well handled only if doctors and teachers are willing to agree on certain definite points and to recognize that they are called upon to study each case on its own merits without prejudice. . . . On the whole, the children who form the

group of cerebral palsies are not suffering from progressive disease nor are they likely to deteriorate. It is essential to remember that motor disturbance and mental disturbance are entirely distinct affairs. . . . Since the causes of cerebral palsy are largely operative in early life, the educational and nursing problems should be attacked in infancy and continuous supervision should be continued indefinitely. . . .

Doctor Crothers goes on to show that:

It is possible to divide the problem into manageable units.

This group of children is not as large as that suffering from infantile paralysis "but more numerous than any single group of important and disabling diseases of the nervous system except feeble-mindedness in general. Roughly, at the Children's Hospital in Boston the proportions run about one case of cerebral palsy to five of infantile paralysis."

It is possible to describe these children so that the educational problem can be intelligently defined.

The management of children with cerebral palsy "can be wisely planned if those responsible for supervision recognize that the future depends upon the intact physiological residue" and that "successful efforts at education depend on earnest and intelligent search for concealed assets as well as on recognition of obvious defects."

Recreation. The monograph, submitted for this study by Charles J. Storey,¹⁶ of Russell Sage Foundation, one of the most complete received, contained the following recommendations:

1. Some one person under the superintendent should be responsible for recreation of the children after school hours and on holidays. No matter how small the institution, one of the staff should have the duty of giving thought to the leisure time activities of the children, both in winter and summer. In large homes, a full-time, trained recreation director on the staff is recommended. Where there is a sufficient number of boys ten years and over, a man play leader or counselor should be provided also. The recreation director might have other duties such as librarian or banker if there is a children's bank. In small institutions, the recreation director may have other duties in the care of the children. She may be one of the teachers in the school whose hours would be arranged so that she would be on duty after school hours,

or she may be a house mother. But whatever other duties she may have, time and opportunity should be given her to study recreational methods in addition to the planning and supervising of the children's play and recreation.

2. The recreation program should provide for the summer school vacation period as well as the winter. This should include definite oversight by trained workers, preferably those who have had charge of the children during the winter and spring. The use of students as part-time recreation workers and counselors is a good plan. One institution usually has two college men who live in the home and care for the boys especially on Saturdays and holidays. In the summer vacation, students can be secured for the summer activities. Naturally they cannot be expected to have experience with crippled children, so that the superintendent or other worker in the home should take time to fully explain to them the physical limitations and some of the physiology of the crippled child. These workers should not take the place of the staff member having responsibility for the children's recreation, but should supplement her work under her orders. Part-time recreation leadership includes special teachers of music, dramatics, expression, and so forth. Many institutions have either volunteer or paid teachers who come in several times a week. Boy Scout troops offer a fine opportunity for outside volunteer leadership. The Scout program specifically provides for crippled boys by means of substitute tests so that in spite of physical handicaps, any boy can rise in the Scout ranks. Similar groups for girls, such as the Girl Scouts, Camp Fire Girls, Girls' Friendly Societies, and so forth, may be led by women volunteers from the neighborhood.

Neighborhood recreational resources can often be utilized by the home. In Philadelphia, for example, an institution that lacked a swimming pool had a special hour at a municipal pool. Recreation leaders from municipal and private playground systems may sometimes be secured, usually without any cost to the institution, as for example the system of providing play leaders by the board of education to many crippled children's homes in the immediate vicinity of New York as part of the city playground work.

3. There is need of training courses covering special problems of recreation for crippled children to supplement the regular recreation courses of training schools and colleges. Another need is for occasional institutes or extension courses for the benefit of staff members already engaged in work with crippled children but who need training in recreation methods.

In her monograph *Musical Playgrounds* submitted to the Subcommittee, Mrs. Charles D. Hubbard of Wyncote, Pennsylvania, says:

A musical playground is a happy, fun-producing playground, first and fundamentally, with a musical equipment, for crippled children shut away from the priceless opportunities offered to normal children in a community playground—one of the most vital influences in the life of a crippled child. It is here that he finds a legitimate outlet for inhibited emotional expression. It is here that he is subtly encouraged to rise above physical limitations, and to make something worth while of his other possibilities. It is here that he is free to express his thoughts and dreams, sure of an understanding reception. It is here that in the intimacy of shared pleasures, a wise adult friendship comes into his life. . . .

Education

Since the mental range of crippled children is as wide as that of normal children, and since they are returned to the regular schools as soon as possible, the academic work should differ little from that of the regular grades. For the brilliant children provision should be made for academic training from kindergarten through high school and on to college; for the mentally deficient and slow-dull groups, and for blind and deaf crippled children, special facilities are needed.

One of the most important studies of this Committee is that of the mental ratings and educational achievement determined by standard tests of more than three thousand crippled children in the special classes of Cleveland, Toledo, and Columbus, Ohio; St. Louis, Missouri; Detroit, Michigan; and Chicago, Illinois. The following figures indicate that the pupils in these schools for the physically handicapped are overaged by a great percentage. Of the 3,000 pupils studied, over 75 per cent are overaged; 22 per cent are of average age; .017 are underaged chronologically.

There are seven classifications of mental capacity in this study and the percentage figures indicate that the pupils are running true to form—the average abilities falling in the middle groups, and the extremes falling off in the orthodox

proportions. With the exception of the eighth grade, the greatest number comes in the fourth group with normal mental ability, the I.Q. ranging between 98 and 118. Among the pupils, the range is from low grade subnormality up to and including very superior ability, approaching genius.¹

Just what percentage of crippled children stand in need of special education has not been determined. About 35 per cent of all crippled children, a very conservative estimate, has been offered by the Chicago public school system and by the departments of education of Ohio, Michigan, and Wisconsin.

In this brief report no attempt is made to cover provisions which could and should be made for the 50 to 60 per cent who attend the regular classes. When vocational opportunities come under consideration, principals and teachers, in cooperation with parents, can, without personal emphasis, provide safety and comfort—a helping hand, a comfortable seat, an adjusted program, watchful guidance over physical and emotional development, and wise counsel.

For the 30 to 50 per cent who should attend special classes or schools, comparatively little has been done since the establishment of the first classes in New York City and Chicago thirty years ago.

The education of large numbers of crippled children may be provided in the regular classes of the public schools, and as early and adequate orthopedic care are made available, the proportion whose needs may be met in this way increases. If the child cannot profit by the regular school program, then special educational facilities must be provided for him.

Successful examples of special facilities for education for every type of community may be found including: special unit schools in large cities, special classes in smaller cities, unit-county classes, or county and village combined, with the children boarded in foster homes, classes and bedside instruction in local hospitals and state institutions, and home teaching both in cities and in isolated districts.

In the larger cities there are two types of organization,

the unit school or schools and scattered classes. Of the larger cities, New York and Philadelphia have scattered classes; but the latter, after an exhaustive survey and study of the problem, is building the first of three projected unit schools. In cities of less than 100,000 population the special classes are usually housed in regular school buildings adapted to crippled children's needs.

Schools for crippled children, specially designed or adapted, should have wide corridors, easily accessible exits, elevators, ramps and stairways for buildings of two stories or more in height—the latter forms a series of challenges to effort—auditorium and gymnasium facilities, small treatment rooms, a treatment pool, rest rooms, lunch room, and industrial rooms. Classrooms are usually provided with adjustable movable desks—special leg supports for desks are now available. Wheel chairs should be provided.

Cost. The per capita cost of providing special schools for crippled children varies, as does the cost for normal children. Arch O. Heck, Associate Professor of School Administration of Ohio State University, in his report on classes for crippled children in 27 cities in the United States, shows that the per capita cost for crippled children varies from 6.45 times the cost of education of the normal child in one city to 2.92 times in another, the median being, 3.8 times. The cost of educating a crippled child varies from \$186.88 in one city to \$593.50 in another, the median being \$292.76. In many cases transportation accounts for the greatest part of the excess cost. In 45 cities reporting on this point, the annual per capita cost for transportation varied from \$26.54 to \$162.91. Buses used for transporting children to and from classes are available in many cities for visits to clinics and dispensaries, and for educational and recreational trips. In each bus there is usually an attendant besides the driver.

Education by Age Groups

An analysis of the many complex problems encountered in the attempt to carry out the program of care and educa-

tion of crippled children may be somewhat simplified by approaching them from the standpoint of the needs of these children in three age periods—the preschool, the elementary school, and the secondary school, or vocational period.

Preschool. Although numerically the group of preschool children is large, and, from the standpoint of the prevention of crippling which results from disease and congenital conditions, is strategically the most important, until recently, less attention has been given to study of the needs of the preschool crippled child than to those of the older children. In this country the cause of crippled children has come to public attention through the realization of the pressing educational and vocational needs of the much larger numbers of young persons in need of employment. With growing comprehension of the problem as a whole has come the realization that, while inevitably there always will be large numbers of crippled children for whom special facilities for care and education will have to be provided, the center of attack in the prevention of crippling which results from disease and congenital deformity must be in the years between birth and school age. The earlier studies of cripples include some figures relating to the causes of crippling conditions in the preschool years, and direct attention to the need of further study in this field.^{2, 7}

It is evident that the agencies which have contact with the preschool child have the greatest responsibility for doing preventive work with cripples of the future. If their work in finding the crippled child and getting him under care early can be made more effective it will greatly modify the work of all other organizations.¹⁴

Elementary. The problem for the crippled child between the ages of six and fourteen is to make available to him the elementary education recognized as the fundamental right of every American child, and to employ all possible means to improve his physical condition and reduce his handicap. In order to do this, it is necessary to provide educational facilities for the following groups of children:

Those who, although they may be physically able to reach the school, cannot attend the regular classes with profit

Those who might attend regular classes, but who are in need of transportation

Those who are not able to attend classes even if transportation were provided, and need special teaching

Those in need of vocational training and social adjustment.

The educational program of the local elementary schools can be secured for all of these children by providing transportation to special classes for those who need special equipment, facilities and care, and by providing education in hospitals and other institutions or home instruction for those whose condition may be temporarily or permanently such that they cannot be cared for in the special or regular public school or private school classes.

Vocational Training. Since the end result of the care and education of crippled children is productive citizenship, the critical period of transition from school into industry must be anticipated and provided for through guidance during the years of physical rehabilitation and academic training. Vocational counseling should begin early and be carried on through the cooperation of parents with teachers, physicians, and competent vocational advisers. One of the paramount needs in the program for crippled children today is the organized study of methods of extending and broadening their vocational opportunities. The weakness of the present program lies in the limited knowledge of vocational education on the part of classroom teachers, the lack of trained vocational counselors, and the general misconception of what constitutes vocational training. Thoroughly competent vocational counselors, in cooperation with teachers, medical advisers and parents, should study the native abilities, interests, physical capabilities, and employment possibilities in the light of the economic conditions and opportunities of the individual child. Only the large unit schools are equipped to

give vocational training and that only in a limited field. Basketry, toy making, weaving, fancywork, and so forth are not vocational courses; they are occupational therapy and pre-occupational at best. Woodwork, printing, dressmaking, electricity, sewing, and millinery as given in the schools for crippled children are usually pre-occupational in character. With proper equipment in the schools, opportunities for tryout, or training on the job, and with trained teachers, these could be carried on into the vocational field. The hope for the future lies in the unification of industrial training in the classes for crippled children with the civilian rehabilitation program. This would assure technical training as well for those who could profit by it.

Workers in all phases of care for crippled children and adults testify that the problems of the later adolescent and early adult years are more acute and less adequately provided for than those of any other age group. In the fields of hospitalization, education, vocational training and employment, the problems of this period are real and are in need of early solution, calling for the effective coordination of the services of educational and social agencies. In most states larger appropriations for this phase of work known as rehabilitation, plus increased personnel with special training and a greater degree of cooperation with public and private agencies are needed.

The young person at this period must be able to look forward with the assurance that through a definite plan worked out for him individually, he can undertake a period of training leading to an employment objective for which his physical handicap does not disqualify him. From this point of view the facilities and services available to cripples in the United States are far from adequate, even in the localities where the best work is being done, and in a great many places is wholly unsatisfactory.

Employment

When the child is ready to enter industry or a profession, he should receive help in finding a suitable or stable calling

at which he can work effectively, and so escape the uncertainties of charitable employment.

John C. Faries, Institute for Crippled and Disabled, New York City, dealing with the problems of cripples after they leave the public schools, and studying them "in the light of their disabilities," believes that this study should begin before they leave the elementary schools.

I realize that it is absolutely necessary that everything possible be done to improve the crippled child's physical condition and to reduce his handicap to a minimum. It is essential that his education be carried as far as possible. . . . But we need something more, . . . vocational advice by persons competent to give such advice because they know the limitations which various physical handicaps place upon the crippled and disabled, and the opportunities the work-a-day world holds for them when they are trained to seize them. . . . In the light of what facts we are able to elicit we make a plan. It may not always be a good plan—but it is a plan. . . . Now these conditions should obtain in any good vocational school. . . . What I wish to advocate . . . is the ideal of a plan for every crippled child based upon the nature of his disability and looking to his eventual employment at some task in keeping with his ability. . . .

Louise Odencrantz, Director of the Employment Center for Handicapped in New York City, in a monograph on employment, considers employment under the following classifications, based upon the objections of the employer and the method he takes to protect himself through physicians' reports.

Fear of the employer

Fear that the work will not be well done

The feeling that the employee cannot shift from one job to the other

Higher accident costs

Greater risks in sick benefits

Frequent absence from work

Peculiarities of employees

Employee cannot move about readily

The physical examination

The article concludes:

Changing of the attitude of employers toward the handicapped, must at last analysis be done largely on the individual basis. Unfortunately there are few employers who select an employee entirely on the basis of his fitness for the job for which he is applying and who pay no attention to any physical defect the man may have. General publicity as to what the handicapped have accomplished is helpful. . . . For this reason, agents in state bureaus of rehabilitation, vocational counselors, and placement secretaries in placement bureaus for the handicapped, and others who have direct contact with individual employers, have the best opportunity to provide this aspect of enlarging the opportunity for the handicapped child. . . .

EXTENT AND ADEQUACY OF EXISTING FACILITIES

Extent

Hospitalization. In 1914, 64 institutions and hospitals in the United States were giving more or less special attention to crippled children. Thirty-seven of these, with 2,474 beds and a daily average attendance of 1,968 patients, cared for about forty-nine hundred persons a year.¹⁷

In addition to these institutions there were 5 private day schools, 51 special classes in the public school systems of 5 cities, and at least 15 associations in charge of outpatient or social welfare service in behalf of such children.

Ten years later it was estimated that these facilities had increased to:

- 143 hospitals caring in whole or in part for crippled children, 92 of which reported 5,381 beds
- 45 convalescent homes, 41 of which reported 2,449 beds
- 18 custodial institutions, 14 of which reported 656 beds
- 42 general tuberculosis sanitariums and hospitals, 36 of which reported 453 beds devoted especially to the care of crippled children.

Besides these the report of the 1924 survey shows that there were 87 special state and city public schools and public school class centers and private day schools, 82 of which re-

ported they were provided with facilities for the special education of 6,225 crippled children—a total of about two hundred different classes.³

In the survey of 1924, it was impossible to secure reports made out on a uniform basis, to get all the several inquiries answered, and also to completely discard duplications, hence the survey was incomplete and far from accurate for the agencies reporting. Since the same difficulties were encountered in the survey in 1930, the statistics given here serve only to show certain trends in the work for crippled children and the general increases in facilities and persons cared for.

Table 9 gives figures for 1914, 1924 and 1930. Children's hospitals were not listed in 1924 and general hospitals were missing in the records for 1914. While 45 of the latter reported in 1924, they gave no actual or estimated bed capacity. This information is difficult to secure because separate orthopedic departments are seldom maintained in general hospitals and statistics of orthopedic work are kept in the general records. It is difficult also to separate dispensary and clinical reports. It is certain that there are many more crippled children cared for in dispensaries and clinics than are shown in the 1930 report.

Although it was impossible to tell when only orthopedic children's cases were separately reported, the survey of the Joint Subcommittee gives the following statistics for 1929 for whatever it may be worth. (Table 10.)

The report also showed a waiting list of 3,640 in 26 states.

The record reveals a steady increase in the number of classes, educational centers, and school attendance. (Table 11.)

Home teaching records must be very incomplete, for of the 614 pupils given here, probably 500 were in New York City.

Unfortunately no records known to the Committee exist in the United States with which to compare its findings on facilities for 1930 so far as hospitals and institutions, camps,

TABLE 9
FACILITIES FOR CARE OF CRIPPLED CHILDREN 1914, 1924, 1930

Facilities	1914		1924		1930 ^a	
	Institu- tions	Beds or pupils	Institu- tions	Beds or classes	Institu- tions	Beds or pupils
Hospitals						
Orthopedic.....	10	662	92	5,381	44 ^b	3,364
Orthopedic.....	1	205	6	.....	..	..
Convalescent.....	14	945	41	2,449	73	3,664
Convalescent.....	8	408	4	.....	..	..
Custodial.....	13	361	14	656	18	700
Custodial.....	2	95	4	.....	..	..
Children's.....	3	159	..	.....	35	1,346
General.....	1	78	45	.....	115	1,747
Tuberculosis.....	..	..	36	453	40	500
<i>Total</i>	52	2,913	242	8,939	325	11,321
Educational						
Home teaching.....	..	.....	..	.....	4	614 P
Hospital schools.....	28	1,874 P	..	162 C	81	3,504 P
Public school and classes.....	51 C	821 P	..	200 C	245	8,548 P ^c
Day schools.....	5	524 P	..	.....	11	616 P
Trade schools.....	1	50 P	..	.....	..	.....
<i>Total</i>.....	..	3,269	..	6,225	..	13,282
Miscellaneous						
Summer homes.....	6	148 B	6	239 B	7	300 B
Summer camps.....	..	.....	9	270 B	31	980 B
Special agencies.....	15	.....	40	.....	133 ^d	.....
Dispensaries.....	9	34,842 Ex	..	.....	..	.....
Clinics and dispensaries.....	..	.....	..	.....	..	.....

^a These statistics for 1930 were taken from the answers received to questionnaires sent out by the Committee and from the files of the International Society for Crippled Children which are not always considered to have a high degree of accuracy.

^b "Hospital Service in the United States." *Journal of the American Medical Association*, March 30, 1929, p. 1045, shows that there were 64 orthopedic hospitals located in 26 states in 1928, containing 5,713 beds. In 1927 there were 62 with a bed capacity of 5,595. The discrepancy is due partly to lack of a definition for an orthopedic hospital.

^c The 245 public schools and class centers include 32 public schools which contained a probable total of over 500 classes.

^d Special agencies include the 45 state-federal departments of vocational rehabilitation and the 38 state societies and commissions for crippled children. The total number of all types of institutions and agencies reported in 1930 was 841.

P—Pupils C—Classes B—Beds Ex—Examinations

TABLE 10
PATIENTS HOSPITALIZED IN 1929

	Number	Patients
Institutions for acute care.....	194	22,912
Convalescent beds.....	74	5,483
Custodial homes.....	10	552

TABLE 11
SCHOOL ATTENDANCE 1914, 1924, 1930

Year	Classes	Pupils
1914	84	3,269
1924	362	6,225
1930	500	13,282

and summer homes are concerned. It is certain that the great increase in crippled children's camps which has been made in the last ten years did not show in the survey. There is, however, an opportunity to make a comparison of the educational statistics.

Special Education. The main types of legislative provision for the education of crippled children are indicated as follows:

- 16 states provide special education by legislation, three of these for special local aid only
- 11 states provide for excess costs
- 9 states provide supervision in department of education
- 5 states provide state hospital schools
- 5 states provide education in university hospitals
- 42 states and District of Columbia have vocational rehabilitation service.

Eighty-three cities of 10,000 or more population in 24 states had one of three types of special education for crippled children.

- 35 of these had over 100,000 population
- 16 had from 60,000 to 90,000
- 14 had from 30,000 to 60,000
- 18 had from 10,000 to 30,000

- Of the 83 cities, 24 had established one or more schools:
- 20 cities had one school each
- 2 cities, 2 schools

One city, 4 schools

One, including hospital instruction, 5 separate schools.

Sixty-six cities reported special classes for crippled children. Home teaching is not separately recorded. Of 18 special class centers in cities from 10,000 to 30,000 population, 15 are in the State of Ohio. The number of special schools recorded in this study was 33 having 208 classes and 4,365 pupils, the number of other special classes was 273 with an attendance of 5,673; or a total of 481 classes and 10,038 pupils. Full-time teachers numbered 445, part-time teachers 60, full-time employees other than teachers 128, part-time employees 67, or a total of 700.¹⁸

Agencies Caring for the Crippled. No attempt was made to secure information on the number of persons working with cripples in the United States. The following quotation however touches on the subject:

We have attempted to indicate the increase in the persons caring for cripples in the United States. It has been shown we knew of about 991 employees in this service in 1914—836 in institutions, 125 in school classes, and some 30 connected with what has been termed "outside" work. Our estimates demonstrate that in the last ten years these numbers, respectively, have increased to 3,248, to 311, and to 200. Besides these three divisions of employees, we now have at least 150 persons doing work in civilian rehabilitation, and 25 or more working with state cases under the average age of sixteen years, making a total of 3,934. The average salary received is about \$1,300 a year. This includes a great many persons receiving also maintenance. We also may add to this first total a minimum of 300 additional persons working with the industrial cripple, 3,800 employees in the veterans' bureau, and also 100 with tuberculosis hospitals. Not considering the work of the American Red Cross with physically handicapped persons, those numbers add 4,200 more making a minimum grand total of 8,134 who care for the cripples of the United States. This number undoubtedly leaves uncounted, many orthopedic surgeons and others not directly connected with the institutions and agencies concerned in the National Survey of 1924, or given consideration herein.¹⁹

While no accurate figures can be given, any treatise on facilities for the care of crippled children in the United

States should mention the work done by civic, service, and fraternal agencies.

Laymen's Organizations

Rotary International. A monograph dealing with work done for crippled children by rotary clubs prepared by Chesley R. Perry of Chicago, Secretary of Rotary International, and a pamphlet entitled *Crippled Children* published in February, 1929, sum up the general interest of rotary in work for crippled children, the work done in recent years by a number of clubs, and the organization of state societies for crippled children by these clubs.

Experience of Rotarians and Rotary clubs has shown that work for crippled children is an activity which has been "widely demonstrated by many clubs as worth while." It is estimated that approximately fifteen hundred clubs are now interested in the work.

Ancient Arabic Order Nobles of the Mystic Shrine. The 1929 report of the Board of Trustees of the Shriners' Hospital for crippled children, gives the following summary of work as of March 31, 1929:

Since September 15, 1922, when the first of the Shriners' 15 hospitals located in the United States and Canada was opened, 9,212 children, 8,431 of whom were in the hospitals located in territory under the jurisdiction of the United States, had been treated as inpatients. The records show 19,000 outpatients in all the hospitals. On March 31, 1929, there were 781 in all the hospitals, 598 of whom were children in the United States. The cost of operating all the hospitals for the year ending March 31, 1929, was \$1,207,648.17. This does not include revolving funds aggregating \$320,000 which have been established for the various hospitals.

Kiwanis International. The following quotation from the monograph of Lawrence H. Dierks and Fred. C. W. Parker gives a general idea of the work of the Kiwanis International as of March 17, 1930:

More than 28 per cent of all the clubs in the United States and Canada have constantly carried on financial, clinical, hospital, rehabilitation, and educational phases of crippled children's work. Since the beginning of this work, about 1922, over 12,000 children, most all of whom have had little attention, have been brought into the 1,000 clinics held in towns and cities on the North American Continent. . . . During the past year 142 diagnostic and operative clinics made it possible to conduct over 1,500 physical examinations for crippled children, to perform 311 operations, and to supply several hundred others with orthopedic appliances. . . .

The American Legion. In her monograph on the American Legion, Emma C. Puschner, Director of the National Child Welfare Division, says, among other things:

In the interest of the crippled child, the American Legion nationally cooperates whole-heartedly with the International Society for Crippled Children, and when local movements in the interest of the crippled child are initiated, the American Legion confers with the headquarters of the International Society for Crippled Children to obtain advice and guidance to be transmitted to local legion groups. . . . The American Legion has financed from its national and local child welfare funds, studies and surveys in the interest of crippled children and has joined forces with other local groups in obtaining legislation and appropriations in behalf of the care and protection of crippled children.

Benevolent and Protective Order of Elks. This order has established well working programs operating on a state-wide basis in 5 states, New York, New Jersey, Illinois, Pennsylvania, and Washington, and other similar projects are now being launched. In this group the outstanding program, the results of which are mentioned elsewhere in this report, is found in New Jersey. Employment of local welfare workers and nurses and its sponsorship of a state legislative and administrative program are its important features.

During the last nine months of 1929 the Illinois State Elks Crippled Children's Foundation held 128 diagnostic clinics, examining 5,000 children. Through a temporary state commission it sponsored a state survey in 1930. Elks Lodges in 41 states last year expended \$224,944.14 for crippled

children exclusive of about fifty thousand dollars given by the Washington Elks for a convalescent home to be managed by the Junior League in connection with the Children's Orthopedic Hospital of Seattle.

Other Laymen's Organizations. Considerable work for crippled children is being done in various places by Lion's clubs, The Junior League, the Federation of Women's Clubs and other agencies classified as laymen's organizations.

Special attention should have been given to the work of the Junior Leagues. Activities under their auspices are known to be carried on in Nashville, Tennessee; Louisville, Kentucky; Milwaukee, Wisconsin; Tulsa, Oklahoma; Seattle, Washington, and several other places. Visiting Nurse Associations should also have received special mention. The Women's Federation reported 434 clinics in 5 states at which 22,791 children had been examined.

If it is true, as some leaders in this work now believe, that there should be federal legislation in behalf of crippled children, the combined potential power of all these agencies could easily insure its passage.

Adequacy

Opinions differ radically on the adequacy of the facilities for the care and education of crippled children of the United States. The statement has been made that only a small percentage of crippled children are getting adequate complete care which follows them through to employment. Some believe that the whole group of cripples affected with spastic paralysis are thoroughly misunderstood and poorly cared for. Others think that the whole problem of the custodial care of cripples is neglected and many who should have quarters where they can receive training and sheltered employment are being cared for in infirmaries and houses for the poor.

On the other hand persons of experience will say that in most states the facilities for crippled children are ample and the care equal to or better than that given other socially handicapped persons.

Waiting Lists. The questionnaires revealed that there were 5,113 crippled children on waiting lists in hospitals as shown in Table 12.

TABLE 12

WAITING LISTS OF CRIPPLED CHILDREN

Type of Organization	State	Number of children on waiting list
Centralized	Indiana.....	50
	Iowa.....	87
	Massachusetts.....	331
	Minnesota.....	471
	Missouri.....	130
	Montana.....	250
	Nebraska.....	48
	North Carolina.....	306
	Oklahoma.....	56
	Oregon.....	316
	<i>Total</i>	2,045
Decentralized	California.....	413
	Florida.....	45
	Kentucky.....	38
	Maryland.....	5
	New York.....	318
	Ohio.....	5
	Tennessee.....	12
	<i>Total</i>	836
Unclassified	Georgia.....	93
	Illinois.....	227
	Louisiana.....	73
	Maine.....	20
	South Carolina.....	144
	Texas.....	97
	Utah.....	43
	Washington.....	51
	Hawaii.....	51
	<i>Total</i>	799
Shriners	California.....	316
	Illinois.....	65
	Louisiana.....	73
	Massachusetts.....	187
	Minnesota.....	211
	Missouri.....	130
	Oregon.....	81
	Pennsylvania.....	100
	South Carolina.....	144
	Washington.....	75
	Hawaii.....	51
	<i>Total</i>	1,433

If the 1,433 on the waiting lists at the Shriners' hospitals, which cover large territories including several states surrounding each hospital unit, is subtracted, the reported waiting list is diminished to 3,680. This also takes from the states reporting waiting lists Louisiana, Missouri, Pennsylvania, South Carolina and Hawaii. There is no way of knowing how many institutions reporting failed to give existing waiting lists or how many not reporting have waiting lists. Nevertheless it seems there is a bit of useful information in the fact that 2,045 are found on the waiting lists of states having centralized state programs. Of the 9 legally unclassified states, 7 are really centralized. These 7 have a combined waiting list of 552. In reality, therefore, the 17 centralized programs show a total waiting list of 2,597 and the 9 decentralized programs, reporting waiting lists, have 1,083.

Hospital Facilities. No hospital facilities have been reported in Idaho, Nevada, New Mexico, Wyoming, North Dakota and South Dakota. While many cases are being sent out of these states to Shriners' and other hospitals, the serious problems of discovery of cases, costs, follow-up and education are not being adequately met.

A number of other states report very few facilities within their borders. In these states and others now developing programs, the chief obstacle is lack of adequate funds to carry on work for crippled children in a continuous and coordinated program covering every part of the state and every phase of the service. It is for these states, most of which represent a sparse population and large territorial expanse, that federal aid for the care, education, and employment of crippled children is advocated.

Some of the most complete and adequate programs from the standpoint of facilities are to be found in New York, Ohio, Michigan, New Jersey, Massachusetts, California, Wisconsin, Pennsylvania, Missouri and Oklahoma. Between these groups are to be found various developments which differ widely in the adequacy of the facilities existing and the work done in and through them.

It is believed that very few states need further building

programs, at least so far as hospitals are concerned. It would seem wiser to organize and adequately finance properly qualified coordinating agencies to make use of hospitals, institutions, and agencies already in existence, and the machinery of state departments of education, health and welfare, and to secure from the state the costs of care, medical relief, and education for crippled children. It is believed also that the Federal Government should make an extended study of this whole problem of the adequacy of facilities and the quality and value of the work now being done in the United States for crippled children. Location in at least two states, showing different programs of work of crippled children who passed through the hospitals ten years ago would be of great value in determining in a scientific way the actual facts with regard to the end results of work for crippled children in states representing centralized and decentralized programs.

Prevention of Crippling

Doubtless much of the excellent work being done for crippled children has its bearing on prevention, and from the point of view of acceleration in these services during the past ten years the outlook is encouraging.

The current reports of the United States Public Health Service on the incidence of poliomyelitis furnish a guide to where preventive work is done best and where it needs most to be instituted so far as this disease is concerned.

The splendid follow-up work in infantile paralysis in Vermont, Massachusetts, New York, Ohio, and several other states and a number of cities and the research and accomplishments of the Harvard Infantile Paralysis Commission are all to be commended.

Striking examples of other work have been cited by several state societies for crippled children indicating a complete cooperative state program for cripples consciously including the subject of prevention.

In 1928 Mr. Jeremiah Milbank gave \$250,000 to the International Committee for the Study of Infantile Paralysis for three or four years' study by a group of physicians

and scientists in universities and laboratories here and abroad. The University of Chicago, Columbia University, New York City, and Harvard University, Cambridge, were to be the participants in the researches in this country, and the University of Brussels and the Lister Institute in London, abroad.

Besides the agencies already listed, the Ortho Sprague Institute for Research in Chicago and several others, including the Federal Institute of Health should be mentioned.

Mary L. Selden, Secretary of the Committee on After-Care of Infantile Paralysis Cases in Philadelphia, in her monograph on *Prevention*, submitted to the Subcommittee, treating the subject of prevention from the standpoints of infantile paralysis, bone tuberculosis, and rickets, points out that all congenital deformities should be reported on birth certificates in every state, that in each state other methods should be devised to report diseases which are contagious and which cause deformities when not promptly cared for by competent physicians and that publicity should be given to the importance of:

Parents and guardians making prompt use of the physicians' services for ailing children especially those not yet old enough to attend school

Proper health education and supervision in the schools

The support of health departments

The proper care and treatment of the milk supply.

The most difficult part of the prevention of crippling is securing the cooperation of the family. . . . The results to children remaining in their own homes after the first stages of illness would often be very disastrous without the follow-up . . . organization working with all the agencies interested in the prevention of crippling. . . . This organization should also keep in touch with the family in reference to proper feeding, ventilation, . . . braces or other orthopedic appliances and . . . financial arrangements.

The outstanding cause of crippling among children is poliomyelitis. Since too little is known concerning the means of the spread of the disease to do a radical job of prevention, the present duty is to concentrate on early dis-

covery, complete follow-up, adequate care, family cooperation. Although such work is done well in a few favored places in the United States, there is no nation-wide effort to stimulate it throughout the country. The situation is improving in many places. The private practitioner is doing something to improve conditions but the greatest advance is coming through public health agencies and specific organizations including some of the state societies, departments, and commissions for crippled children. In 1928, 42 states replied to a questionnaire on the subject of poliomyelitis. Twenty-one of them had no state program, 18 were doing general public educational work, 9 were conducting clinics with widely varying degrees of frequency and more or less after-care, and 4 had exceptionally complete programs of follow-up and treatment.

Tuberculosis. The second most important cause of crippling is tuberculosis. In 1928 inquiries were sent to 11 places where the milk survey of the American Child Health Association had shown especially bad situations, asking what was being done at each for the treatment of cripples and for the prevention of crippling conditions:

The inquiries went out to every local private organization which might have a special interest in the subject. Only one reply showed any recognition of the fact that the prevention of crippling conditions was possible and that the salvage of cripples was not the sole and only subject of concern, in spite of the specific question that was asked about prevention. In not a single one of these communities were those who were interested in cripples doing anything toward prevention.

It is said that probably 45 per cent of the population of the country is served with a milk supply that is not under sanitary control. Yet it is agreed that the drinking of milk from tuberculous cows is one of the important causes of crippling.

Rickets. This is the third major cause of crippling. Cumulative and convincing evidence from centers where this disease has been scientifically studied shows that the proper and timely administration of cod liver oil and sun baths will largely eliminate and reduce its effects. Although this cause

can be largely removed reports show that this disease is not being prevented as it could and should be in many places.

The center of attack in the prevention of crippling which results from disease and congenital deformity must be in the years between birth and school age.

Publications on the specific subject of preventing crippling conditions are neither authoritative or national in scope. Many of them deal "with poliomyelitis, about the prevention of which we know little or nothing. . . . There are some excellent printed articles on the proper protection of milk supplies but . . . no evidence of their being widely circulated among those who are interested in cripples." This whole subject needs further study.

Registration. All states should have a system of reporting:

Congenital deformities on birth certificates

Infantile paralysis, bone tuberculosis and the severe cases
of rickets for both preschool and school children

Accident cases.

These should be kept in a state registry under the administration of a governmental bureau concerned with the service the cases are receiving locally or in cooperation with a state program for crippled children. In order to be effective this bureau would not only be occupied with the work of local agencies, but with the cooperation given by the parents and guardians. In this country the whole subject of prevention is connected to a certain degree with the constitutional liberty of the individual.*

Publicity. A paper on this subject contributed by Alfred Fischer of Bloomfield, New Jersey, the chairman of the publicity committee of the international society for crippled children, in part shows that:

Whether it is done by private charity, organized social service, or local and state governmental machinery, the assistance of crippled

* Adapted from Courtenay Dinwiddie's article *Crippling is Largely Preventable*, a pamphlet published by the International Society for Crippled Children, December, 1929.

children will always be a public matter, depending upon the public for financial and moral support. It cannot be left to professional men and women, nor to the public officials entirely. There are too many groups concerned, each of which must understand the function of the other to make possible effective work. The effective linking together of these groups and the recruiting of new personnel to each is a work that can be assisted most effectively by publicity. In this problem publicity must be understood in a very broad sense; . . . It must be very intelligently directed and by those in the highest responsibility. . . . A suitable program must be established and given over to capable technicians. . . .

Attacking the Problem. From the standpoint of the orthopedic cripple, prevention and the research which it entails is a subject which is only being approached here and there. From the standpoint of the *country as a whole*, little has been done. Probably an example for us may be found in the Oscar-Helena-Heim of Germany, which is known there as the Central Research Promotion Institution. Some federal governmental bureau might well be concerned with this subject constantly and its findings made available to all crippled children's agencies in the country.

A state or national program of prevention for cripples becomes a part of a general health program and needs the cooperation of all medical, social welfare, and educational agencies. In every community full-time health officers and adequate nursing staffs, prenatal, infant, and preschool services are needed to carry on these efforts for prevention. This in no way eliminates the need for special agencies to promote the solution of the problem of the crippled child, but is an added reason why they should exist in every state.

The method of attacking the problem of the crippled child in the *large cities* is well on the way to solution, as is that of the child in cities of over 10,000 population. The way for the child in the *village* and in the older *rural communities* where consolidated schools are being established does not seem difficult of solution. What is needed is publicity to awaken school people to its possibilities. It is the child in the western spaces and in the mountainous regions of the coun-

try, where little is being done even for normal children, who presents the most serious problem. This would be a valuable field for research for the Federal Office of Education in its general study of rural schools.

The solution of the problem of the crippled child will be a program in every state, defined by law, and given sound financial support. Such a program should be integrated with the general program of public health and education including the vocational rehabilitation service. Any state interested in developing such a program has but to turn to the various types of organization set up in New York, Ohio, Wisconsin, Michigan, and other states. Surveys, the education of the public and the stimulation of local communities to care for their crippled children, organization and general supervision of classes, and evaluation of services are the responsibility of the state. The local unit—county, village or city—is held responsible for the individual child in this special service and if the first objective in the program is to be attained, some agency must assume responsibility for the long drawn out unremitting orthopedic service necessary for each individual crippled child.

Again, although a state program backed by federal encouragement and with fixed local responsibility is essential, the success or failure of the special classes for crippled children is in the hands of the teachers. Classroom teachers, physiotherapists, teachers of industrial arts, and vocational counselors in this special educational field must have training and experience in dealing with normal children plus special training for the care and education of crippled children.

It is only through the cooperation of an interested and enlightened public that the state and local school authorities can carry out a complete program for the care and education of crippled children, and the rapid advancement of their cause during the last decade must be largely attributed, in the last analysis, to the devotion and services of lay groups of men and women, as well as to the many types of public and private agencies and organizations throughout the country.

SUMMARY

Scope of Study

This report is the result of an attempt made in the first six months of 1930 to "take national stock of the progress and present situation" in relation to the enumeration, medical and social care, education, and vocational training and placement of orthopedic crippled children in the United States. It includes a brief discussion of the efforts being made to prevent the causes which produce crippling conditions among children, and some recommendations in regard to all types of such work in the future and a plan to carry them into execution.

The story is closely allied with the newer developments in public health, social welfare, educational and vocational training, guidance and employment services. Orthopedic surgery and its development is a parallel consideration. This science began in preventive medicine, and prevention should continue to be its chief aim. Gradually but increasingly the medical profession and welfare executives are asking orthopedic surgeons to accept the responsibility of preventing and treating this class of disorders cared for by body mechanics, which unchecked, present the problem of the crippled child.

No group of children in need of special care has ever occupied the foreground of attention of so many volunteer organizations and professional agencies as have crippled children in the United States during the last decade. There is little definite knowledge of the numerical extent of the problem and even in many well organized communities the task of finding the children still presents baffling difficulties.

The Problem

The problem is largely a concealed one. Both parents and their crippled offspring seem to endeavor to cover up the

presence of deformity. The traditional attitude of the public toward it is adverse. Furthermore it has been very difficult to define the word cripple so that cripples as a class may be distinctly set off from other handicapped persons.

Since few large cities or states boast organizations which can give readily complete information concerning cripples and all the facilities ordained there for their care, training, and placement, this study statistically is sketchy and incomplete. Programs for cripples worthy of note have been originated almost exclusively through the leadership of one person or a small group of persons usually representing in the beginning only themselves or small, poorly supported private agencies. Many such efforts have failed. Others, where the leaders have had the courage to "keep on keeping on" until the public has been aroused to cooperate and to support the movement, have succeeded.

Because of the peculiar nature of this problem and the abnormal psychological factors entering into it, difficulty has arisen among leaders in regard to the type of program best suited to solve the problems presented. Many state, city, and district programs are institutional and centralized. Recently an increasing number of decentralized state schemes have been originated. The tendency now seems toward decentralization in state programs and toward centralization in the educational programs of cities.

Another feature of the problem which tends to cause difficulties is that expert service is called for from the fields of public health, medicine, education, employment, and statesmanship. Therefore a definite plan of coordination is requisite to the success of any program in behalf of cripples—city, district, state, or national. Such a plan of coordination must also include persons and agencies working with both children and adults.

Discovery, Education, and Employment

The problem of the discovery, care, education, and employment of cripples, particularly those who live in wholly rural states or in isolated or sparsely settled communities,

is one of the most urgent considerations now pressing for solution in this country. Survey findings obtained in studies of crippled children during the last quarter of a century are of sufficient significance to indicate that the problem of the discovery of every crippled child is a challenge to the social resources of any community; and that the assumption that there are not enough such handicapped children in a given community to warrant the provision of special facilities for their care and education is unfounded.

Out of these surveys and enumerations grew the idea that there is an average ratio of cripples in the general population which may be used to estimate the number in unsurveyed territory. This has been set forth on different occasions as 2.5 cripples under twenty-one years of age in every 1,000 of the general population and it has been further stated that about one-third of these are in need of special educational facilities.

Although wide variations in ratios have been established by surveys in different communities—differing from 9.79 to .10 in the general population and from 18.70 to 1.19 per 1,000 of the school population—it seems that the average ratio, formerly projected, may be used advantageously in making estimates from the state-wide standpoint, at least until more exact figures are scientifically established in the several commonwealths.

Certain dangers in this use of estimates become apparent when consideration is given to all the factors of definition, training and experience of the staff of enumerators, on the one hand, and density and character of population, health organization of the community, and incidence of epidemics on the other. Nevertheless, minimum facility requirements for a state program may be safely based upon these estimates if given careful study by persons of experience in work of this character.

Subcommittee findings (p. 133) indicate that on the basis of the 1920 Federal Census the estimated number of crippled children in the United States totals 289,919; also that over fifty thousand of them have been located in surveys and over

sixty thousand were seen in clinics during 1929. These, plus those examined at the large hospital dispensaries, bring the number of examinations made during that year to over one hundred and twenty-five thousand. These figures are given, not in the belief that they are accurate, but to indicate the extent of the problem of the crippled child.

Care and Treatment

At first the movement in behalf of the cripple registered itself almost wholly in providing institutional care. Before 1910 we find, in addition to, or in connection with the original institutional programs, the beginnings of the census, of the survey, of outpatient health and social service, of day classes in private and public schools, of hospital schools; and of agencies and organizations designed to locate cripples, bring expert diagnosis to them, follow up their treatment, and stimulate the development of curative and educational advantages in their behalf.

National surveys of 1914 and 1924 indicate a steady increase in the number of institutions and agencies devoted to the care, education, and employment of cripples, as well as of agencies for the promotion of the cause in their behalf.

The results of the survey of 1930—recorded in this report—show that some field service, a longer period of time, and more funds than were available for the work at this time, are needed in order to secure a complete record of all institutions and agencies dealing with all the crippled children in the United States. The information secured, however, seems sufficient to show that the progress of the movement in behalf of the crippled child is encouraging even if the results are not wholly satisfactory.

Owing to the development of decentralized state programs for cripples, the number of beds for crippled children in general and in children's hospitals has made the largest increase in the past five or more years. The next largest increase is in the number of convalescent beds. Practically no change is noted in the total capacity of the custodial facili-

TABLE 13
INCREASE IN SERVICES TO CRIPPLED CHILDREN

Service	Year		
	1914	1924	1929
Hospital beds.....	3,061	9,948	12,601
Institutions.....	58	257	363
Crippled children receiving special educational advantages.....	3,269	6,225	13,282

ties. A very marked development is taking place in the field of special education in the public schools including hospital classes and home instruction. Possibly service which shows the greatest increase of all is the spread of clinical and diagnostic facilities for crippled children, not only at regularly established hospitals and clinical centers, but through the occasional rural diagnostic conference. Several states now provide for them by statute. A partial list of clinical centers and rural clinics reported on the questionnaires indicates that over 125,000 orthopedic examinations were made in 1929.

Aim and Procedure

The aim of a complete social and educational program for crippled children has been widely recognized as three-fold:

To give every child the best physical condition it is possible for him to attain

To give him the best education it is possible for him to assimilate

To help him find his place for service in the world's work.

While this is almost identical with the accepted standards of normal children, the process of its consummation for crippled children involves coordinated and continuous specialized services all along the line.

For many children, early discovery of the potential crippling disease may mean the complete removal of the physical handicap. For others, even early and adequate attention will not restore completely normal functioning; and therefore follow-up service, social and educational assistance of a spe-

cialized nature must be afforded. The waste entailed by orthopedic surgery without adequate after-care including plans for educational and placement services has been one of the tragedies in the story of the crippled child. There is not a phase of social care in which work must be carried on unremittingly over such long periods as in the orthopedic field.

The need of "help to find his place in the world's work" is not confined to the children whose condition makes it imperative that their education and training be undertaken in the special classes or schools. Numbers of children who are able to carry on in the regular schools may present vocational problems requiring long continued, thoughtful planning. For these children the services of thoroughly competent vocational counselors should be available. These counselors, in cooperation with teachers, medical advisers and parents, can study their native abilities, interests, physical capabilities, and employment possibilities in the light of their several economic and social conditions and opportunities.

Generally speaking, therefore, the aim should be to treat crippled children as normal in so far as it is possible. If there is dependency or neglect or other additional handicap, they should be treated like other children so conditioned. If their physical abnormality is serious enough in itself or in its social or psychological effect to require a special form of education, that should be provided, as far as possible, through the regular schools with, whenever necessary, special equipment and its accompanying excess costs, or through special classes, hospital schools, and (or) home instruction under the supervision of the public school system. There will be some children who will need the services which can only be rendered in the special public or private orthopedic hospital school or in a sheltered, curative workshop.

To carry out such an aim, specialized service is required in all the various facilities. As a rule the established agencies in the fields of public health, social welfare, education, and employment service have not met the problem of the cripple understandingly and cooperatively, and therefore adequately, until it has been specifically presented to them in

its entirety by agencies working wholly in the interests of the cripple.

It is primarily through the efforts of these agencies, and those generally known as civic, service, and fraternal organizations, that public opinion has been awakened and legislation in the interest of the crippled child has been secured. Since 1897 more than one hundred laws dealing more or less directly with crippled children have been passed. Some of them jointly concern other types of physically and otherwise handicapped children and adults. In most states in which complete or adequate programs are now functioning, private organizations have continued to sponsor work done for cripples through public sources. Two of the most recent interesting and constructive provisions of state laws for cripples include:

Special permissive tax levies proposed to insure continuous working funds

Administrative commissions to enforce in a state-wide and coordinated way the various acts of the legislature, which create a complex executive problem running into the fields of public health, social welfare, education, and employment service, as well as dealing with public finance.

Extent and Adequacy of Facilities

The burden of the letters accompanying the reports of 1930 is that only a small proportion of the total number of crippled children in the United States have secured any kind of service; and the percentage in terms of the whole round of services, of which most of these children stand in need, is pitifully small. Probably more than 60 per cent of crippling has its origin with persons under seven years of age. Therefore, with the growing comprehension of the problem as a whole has come the realization that the center of attack, in the preventive efforts at least, must be in the years between birth and school age, a fact which may call for some shifting in the facilities for crippled children.

The facilities for the care, relief, education and employment of cripples are very inadequate from the standpoint of the whole country. The survey of 1930 showed nearly four thousand crippled children on waiting lists. A large proportion of this group was reported from Shriners' hospitals and other centralized institutions. States with well developed decentralized services have practically no waiting lists and others not so far developed have fewer than those which maintain single curative centers for state cases. A number of states reported no facilities. Some of their cases are sent outside the state for care. Probably many of them could be cared for at home, if the state would provide means of finding them and paying the costs of treatment and education in existing local hospitals and schools.

Program

Students of the problem of the crippled child agree that it is fundamentally the responsibility of the states and should be assumed by them and carried out in cooperation with federal and local public and private agencies. It was once thought that the physically handicapped could be cared for only in centralized state institutions. State legislation is making possible city, county, or district orthopedic and school centers. Under such statutes, public health, social welfare, and educational services may be coordinated. And in this may lie the solution of the problem. Private, state-wide agencies, such as the several state societies for crippled children, are promoting and sponsoring such statutes and state and local coordinated services by working through their membership and the civic, service and fraternal organizations affiliated in the societies.

Such a program controlled by the state gives opportunity for local, village, city, and county, as well as district projects to fit into a coordinated whole. It may make greater use of the services of all the available orthopedic surgeons. A complete state program for cripples would include a definite plan to:

Locate all cripples continuously and promptly
Bring to them expeditiously expert orthopedic and medical diagnosis
Secure high quality medical and surgical care, as near the homes of cripples as possible, including: (1) the several special therapies; (2) follow-up social welfare and medical services and the proper use of artificial appliances, and training of parents in after-care
Special education in hospitals, in family homes, in special and regular private and public schools
Vocational training and guidance
Placement at employment in the professions, business or industry.

Such a program is now developing in a number of states and seems essential even if a state has already provided a centralized institution. This conclusion is one of the most interesting accomplishments of the New York State survey conducted under legislative authority in 1924 to 1925.

No two states can expect to use identical programs. Each must develop its own in keeping with existing conditions, circumstances, and facilities. In the smaller states with compact populations, all of these activities might be worked out as the in- and out-patient services of a centralized institution co-operating with interested departments of the state government.

Prevention

Much more effort is being expended on the salvage of crippled children than upon the prevention of the causes which disable them. It is generally recognized that the initiation of a constructive working program of prevention is difficult. In each cause of crippling a special and different method of procedure seems to be required. Most of the available funds, too, are needed in the work of salvage. Of course much deformity is prevented but there is no tangible way to measure the results. In 1928, 42 states replied to a questionnaire on prevention and in only one instance was it thought possible to do more than care for those needing

physical care and special education. No nation-wide effort to stimulate preventive work and research exists. Publications on the specific subject of preventing crippling conditions are not authoritative or national in scope. From the standpoint of the orthopedic cripple, prevention and the research it entails is a subject which is just now being approached, more or less locally. It may be a new hope will arise from the recent action of Congress in the creation of the National Surgical Institute.

Conclusion

It seems important that some provision be made to continue the study of costs, accomplishments, recurrences of orthopedic cases for treatment, total numbers, relapsed cases and those actually cured and rehabilitated. Possibly this might be done in only three or four states which represent different types of working programs.

If representatives of all laymen's groups interested in crippled children could be called together it is possible that a cooperative working agreement might be ordained which would eliminate a great deal of duplicated effort. The White House Conference might be a logical agency to issue an invitation to the national officers of these bodies requesting them to confer for the benefit of the whole movement in which they are severally more or less individually interested.

It also seems that a conference might well be called inviting the national agencies dealing with the blind, the deaf, the cardiac, the speech defective and the orthopedic cripple to send representatives to confer on problems of the physically handicapped which may be of common interest. Possibly the two conferences might meet simultaneously and have one or more sessions together.

The whole subject of employment of the handicapped needs study. In order to improve the present unsatisfactory situation it is necessary to overcome the existing condition of incomplete training of those cripples seeking employment and the fear of the employer who is asked to engage phys-

ically handicapped persons. For this purpose trained vocational counselors will have to be made available throughout the country, possibly in connection with the state departments of vocational rehabilitation.

The system now working in a few states whereby it becomes the business of somebody to discover the proper leadership in work for cripples and assist it in establishing constructive programs should be extended to all states. It may be ordained from either public or private sources. Possibly it might be affiliated with some agency of national scope which represents all types of services to the cripple.

RECOMMENDATIONS

1. From the educational standpoint the problem of the crippled child is constitutionally a state responsibility. Many of the states have not consciously and specifically assumed that fundamental obligation. Some of the states have also assumed the responsibility of finding, diagnosing, treating, and placing cripples in business, industry, or the professions. Such complete service should be legally required in every state.

2. Every state should establish legal procedure to find all crippled children by a continuous process as soon as possible after the onset of their crippling conditions. These records should be kept in a central permanent registration for the use of the interested departments of state.

3. Every state should design legal procedure to give to crippled children in addition to school medical inspection, expert orthopedic diagnoses, at least annually until discharged by an orthopedic surgeon.

4. Every state should provide by law for proper facilities for hospitalization for crippled children without requiring them to be entered on waiting lists. This should be accompanied with outpatient and social service available before and after hospitalization. It should be accompanied also, when advised by physicians, with proper facilities for physiotherapy, occupational therapy, and recreation which should be given in approved places that cooperate properly

with convalescent, custodial, and educational facilities for cripples.

5. A state program for crippled children should be built upon the rights of individuals to an equality of opportunity, especially from the educational standpoint. Academic education and prevocational and vocational guidance and training adapted to crippled children should be available to them at all times in which they are physically able to receive the same regardless of the location of their residence. Physical care and education, designed to produce self-supporting and useful citizens should be carried on together.

6. A scientific plan for the vocational guidance and placement of crippled children, as they are trained, in business, in the professions and in industry, should exist in each state. It should be centered in or properly coordinated with the federal-state vocational rehabilitation service.

7. A central administrative service should be established to stimulate, coordinate, and supervise all the various types of effort in each state; to assist the development of the work in keeping with the conditions and circumstances existing there; and to relate it to the activities in behalf of the blind, the deaf, cardiacs, and the general health, medical, welfare, educational and placement programs of the Commonwealth.

8. A general federal program of research in behalf of and assistance to crippled children should be ordained and administered by a federal service with which the Federal Bureaus of Education, Vocational Rehabilitation, and Children's Bureau and the United States Public Health Service are affiliated. In cooperation with the Federal Bureau of the Census and the administrators of the several state programs, this service could maintain a national bureau of information keeping current information similar to that assembled by the White House Conference. It could also distribute federal money to a properly constituted state service for crippled children in the several states. In order to make use of established machinery in the states, this service might be placed administratively in the Federal Bureau of Vocational Rehabilitation.

Experience seems to indicate that a state society for crippled children is one method now followed with varying degrees of success in which these recommendations may be carried into execution expeditiously. One of the aims of the White House Conference was to stimulate in the remaining states similar private agencies composed of the interested members of civic, service, fraternal, professional and lay agencies. Such agencies, when adequately supported socially and financially by properly interested and well distributed representatives and guided by executives of training, tact, and community organization ability, can bring to crippled children expeditiously a proper equality of opportunity. They can:

- Coordinate all interests within a state and guide them in the development of a properly adapted type of state program
- Stimulate the citizens to demand of the state government proper legislation and appropriations and faithful administration of established laws
- Join in national research in behalf of crippled children and the eradication of the causes of crippling by affiliating with related nation-wide agencies
- Arrange to promptly carry into execution the final recommendations of the White House Conference which apply to their fields of endeavor in their respective jurisdictions
- Cooperate with all properly interested agencies in securing any needed federal legislation, appropriations, or administrative efforts in behalf of cripples or in behalf of the prevention of the causes of crippling conditions.

APPENDIX

STATE LEGISLATION FOR CRIPPLED CHILDREN

More than 100 laws dealing more or less directly with crippled children have been passed by state legislatures. These plus the 44 referring to vocational rehabilitation make a grand total of approximately 144. Subtracting 14 which were virtually appropriation bills and 19 others which more or less are duplications and 2 rehabilitation acts not now functioning, we have about 109 active statutes, some of which jointly concern other types of handicapped children. These numbers do not include some 70 legal provisions of the general school laws dealing with transportation, school census, and exemptions from the compulsory school laws because of physical and mental disability. Tables 1 and 2 represent a partial classification of these various statutes.

All statutory provisions relating to cripples in the United States may be considered conveniently in three general divisions: locating; providing medical, surgical, hospital, and convalescent care; education, rehabilitation, and employment.*

Locating Cripples

The first legislation looking toward a state census was enacted in Massachusetts in 1904 to 1905, the second in New York in 1924, the third in New Jersey in 1926. Other acts of a somewhat similar nature were passed in California in 1927, in Michigan in 1928, and in Arkansas, Illinois, Kansas, Minnesota, and Tennessee in 1929. Other states have laws or administrative orders providing for various types of surveys including those which require the reporting of birth deformities. Acts of the last type are found in Wisconsin, Minnesota, and New Jersey. Such reports are made without specific acts in Ohio and Missouri and possibly other states. (See Table 2.)

* Howett, H. H. "Legislating for Crippled Children." *The Crippled Child*, June, 1928, pp. 3-5. August, 1928, pp. 42-46. Also published in *Welfare Magazine*, May, 1928.

Crippled children are also located by district or county diagnostic clinics which are provided for by law in Arkansas, California, Florida, Kentucky, Michigan, and Tennessee. Other states conduct such diagnostic conferences without statutory authority.*

Medical Care

State legislation relating to medical, surgical, hospital, and follow-up service to cripples may be treated under four general headings:

Special centralized hospitals owned and maintained at public expense in connection with state university hospitals

Centralized institutions owned and operated by the state and under the management, directly or indirectly, of the state government

Miscellaneous institutions receiving various types of subsidies or state aid

Public and private local institutions which receive public funds coming in whole or in part from the state and paid for specific services rendered to individual needy crippled patients.

University Hospitals. Special centralized hospitals owned and maintained at public expense in connection with state university hospitals are located chiefly in Michigan, Iowa, Oklahoma, Indiana, Missouri and Wisconsin, and to a lesser degree also in Oregon, Kansas, Texas, and Virginia. In 1927 changes were enacted in these statutes in Michigan and Oklahoma to make the laws more democratic and allow other hospitals to receive state cases when properly equipped and qualified from the standpoint of personnel and staff. The Wisconsin law was the last of these acts to be passed. This is a special orthopedic hospital for children created by law in 1929, costing \$300,000 and under the control of the State University Board of Regents.

Central Institutions. The first state institution strictly and wholly for the care of indigent crippled children was created in New York by the statute of 1899. Similar laws were passed in Massachusetts in 1904 (Chapter 446), in Nebraska in 1905,† and in North Carolina in 1922. Minnesota's first hospital was of the first type, but on merging with a second hospital in 1910, Minnesota also entered this classification. In 1925 Pennsylvania passed a law of this nature and in 1930 opened a somewhat similar hospital.

* *Ibid.*

† Laws of 1913, and Compiled Statutes, 1922, p. 2160.

Laws providing for care of cripples at existing state-owned institutions ordained for other purposes were passed in Michigan in 1912-1913 to provide care at the State School for Dependent Children, and in Kansas in 1915 and in Wisconsin in 1919. A somewhat similar law in West Virginia in 1917 had reference to services to be rendered at certain Miners' State Hospitals.*

Miscellaneous Medical Provisions. Subsequent to 1900, a third type of medical legislation, which can only be classified as miscellaneous acts, began to appear. Acts, consisting largely of legislative appropriations to institutions, hospitals, and state governmental departments, were passed in New Hampshire first in 1906, in Florida in 1911, in Virginia in 1918, in Alabama in 1927. And beginning previous to 1914 appropriations were made to the Children's Hospital, Portland, Maine; to Kernan Hospital, Baltimore, Maryland; to the Industrial Home for Crippled Children, Pittsburgh, Pennsylvania, and to the Newington Home, Connecticut. In 1927, the last institution was given \$300,000 for a building and improvement program.

Decentralized State Medical Programs. The fourth group, representing the decentralized state medical program, started with the separate laws passed in Ohio in 1913, 1915, 1917, and 1919. These laws dealt with the hospitalization of crippled children in various approved hospitals of the state through the act administered by the state division of charities; the special education of blind, deaf, and crippled children under the supervision of the state department of education, which was authorized to pay the excess cost to local boards of education; and the Federal-State Rehabilitation Law. In the state program, in addition to this, the state board of health took over the program of rural clinics for crippled children from the rotary clubs and operated them under legal authority previously granted. These laws, amended in 1921 at the behest of the Ohio Society for Crippled Children, are continuously sponsored by that society and their administration is coordinated through the public interest stimulated by members of this society.

Similar laws, creating somewhat similar decentralized services, in whole or in part, were passed in Vermont, New Jersey, and Montana in 1921; in North Dakota and Pennsylvania in 1923; in Kentucky, New York and Pennsylvania in 1924. The New York Temporary Commission for Crippled Children in its report in 1925 recommended a law which was passed, placing New York in the decentralized class

* Howett, Harry H. *Legislating for Crippled Children*, pp. 8-9.

in reality, instead of the centralized institution class. In 1928, a very similar result occurred in New Jersey. Decentralized programs were initiated in West Virginia and Tennessee in 1925 and amended or strengthened in 1929. In 1927 New York amended her law providing further decentralization and Michigan and Oklahoma opened up theirs so that more than one hospital could care for state cases. California passed two laws which together created a complete decentralized state program. Arkansas, Florida, Kansas, and Mississippi approved statutes of the decentralized type in 1929 and in 1930. Such acts were pending in the legislatures of Virginia and Massachusetts as this report was written.

The costs accompanying, and the accomplishments of all these laws are very difficult to tabulate and represent a service which should become the subject of a special study following the filing of this report. (See Tables 1 and 2.)

In 1914, less than one thousand persons were working to give care and education to cripples in the United States; in 1924 the number had increased to about four thousand;* and the present study indicates that this latter number may have doubled in the past six years.

Special Education

Most of the early institutions for crippled children provided some kind of limited educational opportunities for their patients, facilities which have improved with the succeeding years.†

Ohio in 1915 and New York in 1917 seem to be the first states to legislate in behalf of those crippled children who were not in institutions or hospitals. These two early state legislative efforts were truly decentralized programs in which the work done in local schools was supervised and standardized as far as practicable by the state departments of education. They authorized the establishment of special classes for deaf, blind, and crippled children; the states paid the excess cost—in Ohio, on the pupil attendance basis, all above the amount of educating a child of normal needs, and in New York on the teacher salary plan, so that one-half of the salary should be paid by the state.‡ A New Jersey law of 1918 provided for \$500 for each teacher to be

* Howett, Harry H. "Who Cares for the Cripple?" *Hospital Social Service*, Vol. 16, 1927, p. 554.

† Howett, Harry H. *Progress in the Education of Crippled Children*. Elyria, Ohio, International Society for Crippled Children, January, 1930, pp. 7-10.

‡ Howett, Harry H. *Legislating for Crippled Children*, III.

paid by the county to school districts having special classes. In 1919 Wyoming appropriated \$10,000 for the tuition, transportation, and living expenses of handicapped pupils, but most of the money appropriated by this state during the intervening years has been used for mentally defective children. It is maintained that in Wyoming, and in some other states similarly situated, the tax duplicate will not sustain the amounts required to properly educate all physically and mentally handicapped children.* This is the basis of an argument now being made in favor of federal aid in behalf of crippled and other handicapped children.

In 1919 Missouri followed with a mandatory law for the education of deaf, blind, crippled, and mentally defective children, and in the same year and in 1920 Pennsylvania passed laws providing that one-half of the total expense should be paid by the state to local school districts or to private schools.

By 1921 the principle of educating crippled children in special classes was accepted in this country. That year 5 states either amended their present laws or passed new ones. The problem was recognized as a dual local and state responsibility which to a great extent had to be financially supported by state funds and stimulated and supervised by state authority.

New Jersey amended her law to fix certain responsibilities upon the school medical inspector and to provide, as in New York, that a district should have ten or more pupils before a special class was required, but that no class was to contain more than 18 pupils. California passed a new local permissive law. Missouri's law was made permissive and state aid based upon the teacher salary basis amounting to \$750 per year was granted, but not to exceed in any case two-thirds of such salary.

In Minnesota the statute of 1921 authorized the state commissioner of education to grant permission to school districts to establish and maintain special classes, and to issue the "requirements" under which such classes were to be established; provided for registered nurses; legally defined crippled children; and required local superintendents to report social, educational, and fiscal information to the commissioner. State aid for the excess cost was provided to local districts not to exceed the amount of \$200 annually for each crippled child. This amount was designated to help defray the costs of "salaries for teachers, nurses, transportation, special supplies and equipment."

* Wyoming State Department of Education. Biennial Report, 1926-1928, pp. 37-72.

TABLE 2
OUTLINE OF STATE LEGISLATION

LOCATING CRIPPLED CHILDREN										EDUCATION											
STATE	Surveys	Clinics	Birth reports	Special census	School census	Permanent register	State hospital school	School university hospital	Other state schools	Special education	State supervisor	Transportation	State aid			Number of states	Definition	Exemption	Compulsory attendance	Vocational guidance	Ages
													Per pupil	Per teacher	Excess cost						
Alabama.....					<i>b</i>					<i>a</i>	*	*	<i>b</i>	100 <i>i</i>	½	*	*	<i>s</i>	*	3-21	
Arizona.....	*	*			*					<i>a</i>	*	*				*	*	<i>p</i>		4-16	
Arkansas.....	*	*			<i>b</i>													<i>p</i>		4-16	
California.....	*	*			*													<i>p</i>		4-16	
Colorado.....	*	*			*													<i>p</i>		4-16	
Connecticut.....					*				<i>c</i>	<i>a</i>	*							<i>p</i>		4-16	
District of Columbia.....					*					<i>a</i>								<i>p</i>		4-16	
Delaware.....	*	*			<i>b</i>					<i>a</i>			300 <i>j</i>	*	*	*	*	<i>r</i>		5-21	
Florida.....					*					<i>a</i>								<i>r</i>		5-21	
Georgia.....	*				*					*								<i>r</i>		5-21	
Illinois.....					*					*								<i>r</i>		5-21	
Idaho.....					<i>b</i>					*								<i>r</i>		5-21	
Indiana.....					<i>b</i>			*		*			*		¾	*	*	<i>s</i>		5-21	
Iowa.....		*		*	*			*										<i>s</i>		5-21	
Kansas.....		*		*	*			*	<i>c</i>									<i>s</i>		5-21	
Kentucky.....	*	*			*					<i>a</i>		*						<i>s</i>		5-21	
Louisiana.....					<i>b</i>							*						<i>s</i>		5-21	
Maine.....					<i>b</i>					*		*						<i>s</i>		5-21	
Maryland.....		*		*	<i>b</i>					*		*			2,000	*	*	<i>s</i>		5-19	
Massachusetts.....					<i>b</i>		*			<i>a</i>	*	*	200 <i>j</i>		*	*	*	<i>s</i>		5-19	
Michigan.....	*	*	*		<i>b</i>			*	*	*	*	*	250 <i>j</i>		*	*	*	<i>s</i>		5-19	
Minnesota.....					*			*		*	*	*			*	*	*	<i>s</i>		5-19	
Mississippi.....			*		<i>b</i>			*	*	*	*	*			*	*	*	<i>s</i>		5-19	
Missouri.....			*		<i>b</i>			*		*	*	*			*	*	*	<i>s</i>		5-19	
Montana.....			*		<i>b</i>			*		*		*	750	*	*	*	*	<i>r</i>		16	

Nebraska.....	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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^a City schools without state law, or law authorizing schools but none established.

^b Power granted to State Department at its discretion.

c Connecticut semi-public—Kansas not used.
d No state aid but law requiring special aid.

Three-fourths of whole cost plus 25 per cent to 30 per cent of minimum salary.

f State pays if parents are unable to do so.

County pays the \$500 and state rest of excess.

A "Educable" children.

Maximum for high school and for elementary school. County pays the other half of excess.

- 1 Pays excess for maintenance care and instruction.

But not more than one-half of salary.

2 New York is t
registration.

Two hundred and fifty dollars more may be charged for board when necessary. Wisconsin pays \$150.

when necessary. Wisconsin pays \$150.
Clinics not required by State Law.

Seventeen states dismiss for physical and mental disability on authority of physician.

Eight on authority of Board of Trustees.

2 Six on authority of superintendent or principal.

Two on authority of attendance officer.

Fourteen on authority of others. In New York no dismissal if correction is possible.

In Ohio the education law of 1917 covered all the features of the Minnesota law except for the provision for nurses. In 1921 it was amended so that the state "excess cost subsidy" was raised from \$150 to not to exceed \$300 a pupil for a school year of nine months. It also provided for "hospital schools" and "home teaching" and an amount not to exceed \$250 in addition for each pupil for maintenance in cases where pupils have to live away from home to attend special classes or schools. In 1921 Ohio also accepted the terms of the Federal Rehabilitation Law.

Laws and amendments passed since 1921 include no really new features, except possibly in Oregon where the law of 1923 provides for "hourly teachers" and a special local "crippled children's instruction fund." The 1922 law in Louisiana applies wholly to the duties of local parish schools and that in Mississippi to transportation. Illinois and Michigan statutes of 1923 followed closely the various provisions found in the laws of Oregon, Minnesota, and Ohio.

The New York Law was amended in 1924, 1925, 1926, and 1927 to provide a state subsidy of one-half of the salary of teachers in special classes, not to exceed \$1,000 a school year. It also provides that one-half the cost of "home teaching, transportation, scholarships in non-resident schools, tuition, and maintenance," when approved by the state commissioner of education, should be a charge upon the county. City boards of education are empowered to establish special classes for physically handicapped children. State aid equivalent to an elementary teacher's quota—approximately fifteen hundred dollars a teacher each year—is provided wherever special classes are established. This new equalization quota practically sets aside the law with regard to "one-half the salary of teachers." Cities pay one-half of cost only when cases are committed by a special city children's court. This applies also to surgical and medical treatment, when approved by the state commissioner of health.

In 1927, hospital schools and bedside teaching were placed partially under the control of the Michigan Crippled Children's Commission, in cooperation with the state department of education, which prescribes the requirements for all special education. Wisconsin's 1927 Act appropriated \$100,000 to carry out the provisions of the law relating to the education of handicapped children at an annual excess cost not to exceed \$300, a limit raised to \$450 when the pupil must live away from his own home or be transported separately. In 1929 this law was amended to include education in hospitals caring for crippled children.

The 1927 California law provides for: local interdistrict cooperation and local cooperation with the state civilian rehabilitation service; special classes and home visiting teachers; transportation; social service; individual vocational counseling and guidance and occupational training; local standards set, supervised and enforced by the state department of education; and costs distributed on an equitable basis to the local school districts, the county, and the state. Indiana provides—1927—that the state pay “an amount equal to three-fourths of the excess cost of special education.

Laws passed in New Jersey in 1928 extend education to home-bound cripples, secure for the first time a subsidy from the state in addition to the one from the county, and provide for state standardization of special education, local registration of crippled children, and cooperation with the commission for rehabilitation of handicapped persons, including crippled children legally.

In 1924 it was estimated that there were 6,225 pupils in over two hundred special classes for crippled children. In the decade ending in that year the number of teachers of crippled children increased over 150 per cent. The number of teachers in Ohio and in New York which in 1914 was respectively 6 and 67, in this ten-year period increased to 72 and 170. Ohio, New York, Michigan, Pennsylvania, California, Wisconsin, and a few other states have special state supervisors or directors of corrective education to stimulate, supervise, and standardize the work of special education.

Conclusion

Existing legislation establishes the fact that the problem of the cripple is a private and public, as well as a local and state responsibility. Its administration may indicate that, in certain respects, it should be also a federal responsibility. It seems evident that public responsibility will be assumed promptly and executed properly and adequately only when there exists in each state an organized private constituency for crippled children and disabled persons to enlighten the public on the problem and to convey the wishes of interested persons and agencies, as well as of the public, promptly and forcibly to legislators and to those who administer the laws relating to handicapped persons. This should lead to laws providing special tax levies to cover adequate appropriations to defray the costs of care and education for physically handicapped persons. Precedents for this are now found in Oklahoma, Arkansas, and California.

Private and State agencies dealing with the state-wide programs for the deaf, the blind, the crippled, and mentally handicapped children should federate for the good of the causes which they represent and also for the legislative measures and appropriations which their combined strength could insure. The resulting advantages may also be attained to a degree by the type of state law which federates the various responsibilities for cripples, on the part of a state, in a single commission. First steps toward this end are noted in the laws creating permanent commissions in New York, Michigan, Kentucky, West Virginia, Arkansas, and Florida. Their ultimate success will depend largely upon the leadership provided in the states themselves. If the Federal Government could have a hand in the matter, such developments in other states might be accelerated, and many of these statutes which are now more or less dead letters or producing only partial results could, through renewed efforts and more competent leadership, become effective.

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INTERNAL CONDITIONS

INTERNAL CONDITIONS

INTRODUCTION

THE list of diseases defined as "internal conditions" is long, but only those diseases which definitely handicap the child and which occur frequently enough to constitute a community problem, come within the scope of this report. On this basis the term *internal conditions* applies to heart disease, parasitic diseases, tuberculosis, goiter, malnutrition, malaria, and venereal diseases, which are likely to be overlooked by parents and lay persons.

Since goiter and nutrition,¹ * malaria and venereal diseases^{2,3} have been dealt with by other committees of the White House Conference, this report has been restricted to *tuberculosis*, *heart disease* and the intestinal parasites, *hookworm* and *ascaris* which have been considered according to the following outline:

Prevalence and distribution in the United States

Protection: medical principles underlying protection and the application of these principles; present social and medical provisions for protection

Prevention: medical principles underlying prevention and the application of these principles; present social and medical provisions for prevention.

The first concern of the Committee was to find out who are the children affected with these diseases, how many there are, and where they live; the second, the extent to which they are handicapped; the third, what communities are doing to help them; and the fourth, what additional measures

* Superior numbers refer to references at end of section.

should and could be undertaken. Their number can only be estimated from certain available data. How much we do not know about these children may be as significant as how much is known. Many of them do not have symptoms which are easily noticed by parents. An examination by a physician, frequently a very thorough examination, is necessary to discover them. This is one reason why it is highly important that all children receive periodic physical and health examinations.

TUBERCULOSIS

There are two types of pulmonary tuberculosis in this country, the *childhood type* and the *adult type*. Infection in this disease is practically always the result of contact with an infected person. Occasionally milk is the indirect source of infection.

The childhood type, the term adopted by the American Sanatorium Association, May, 1929, applies to tuberculosis disease resulting from first infection in the lung and associated tracheobronchial lymph nodes with tubercle bacilli regardless of the age in life when it develops. The initial lesion may be in any one of a number of places in the body, but the lungs and that part of the lymphatic system draining them are the most common site.⁸

The adult type is the result of continued infection or a reinfection from an exogenous or endogenous source; that is, it never develops except in the presence of a previous infection with tubercle bacilli which has resulted in some immunity. The adult type is more common among adolescents than among younger children. This is the destructive type that takes such a toll of human life through the teens. It generally begins at the apex of the lung from which it has a tendency to spread. It has been amply confirmed by subsequent observation that latent apical tuberculosis of adolescence is often the precursor of manifest disease of early adult life. It is characteristic of this form that the tracheobronchial lymph nodes are not grossly involved.⁹ The urgent need of repeated roentgenological examination of adoles-

cents who have been exposed to contact with tuberculosis is obvious.

Incidence and Detection of Two Types. The childhood type of tuberculosis is usually found in children; it rarely occurs in white adults but is not uncommon in adult Negroes. It is the result of a primary infection, it may be localized in any part of the lung, and the associated tracheobronchial lymph nodes are always involved, though this may be difficult if not impossible to demonstrate. Infiltrated areas commonly resolve leaving trivial scars, or none, except for the foci of caseation, which usually become calcified. Prognosis is good.⁹

The adult type, the result of a reinfection, occurs more frequently in adolescents than in children. Localization is usually apical, extending along the pleura, often posterolaterally. The first clinical manifestation, however, is often in the infraclavicular space. The tracheobronchial lymph nodes as a rule are not involved by this reinfection, except sometimes in the terminal stage. Infiltrated areas may resolve with production of more or less fibrous tissue. Prognosis in children should be guarded.

The main difference between the childhood type and the adult type is that the former represents the reactions caused by the tubercle bacillus on unsensitized tissue, while the latter is a reinfection on sensitized tissue.

The childhood type of tuberculosis is significant because it is believed to be a precursor of the adult type and because the condition is more amenable to treatment than in the later stages.²

PREVALENCE AND DISTRIBUTION

The first purpose of the study of tuberculosis by the Committee on Internal Conditions was to determine the prevalence and geographic distribution of children with the disease. This involved determination of the number of tuberculous children, type of disease, age groups, sex, nationality and degree of handicap.²

According to the findings of the White House Confer-

ence, there are in the United States 382,000 tuberculous children and 850,000 more suspected cases.¹⁰

Various studies and investigations on tuberculosis in children reveal the following facts with regard to its incidence and mortality rate:

Infection among children in different cities and states may vary from 10 per cent to 90.2 per cent, depending upon the opportunity for exposure

The incidence of manifest tuberculosis among school children varies from .5 per cent to 3.5 per cent

The childhood type of tuberculosis increases so as to become the prevailing type during childhood. The adult type is more common among adolescents than among younger children

The death rate from tuberculosis in the teens has not declined as rapidly in the last decade as at other age periods, nor as rapidly in girls as in boys of this age.

Some Significant Studies

The following investigations made in cities and states of America throw further light on the incidence of tuberculosis among children.

Cattaraugus County, New York. Under the auspices of the Milbank Memorial Fund County Health Demonstration, 736 grammar school children and 72 high school children in the schools of Olean were examined during the school year, 1924 to 1925. Forty-nine cases of tuberculosis, all forms, including the childhood type, were found, of which 8 cases—about one per cent—were clinically active.

In 1925 to 1926, 331 children in 17 rural schools were examined. Children who gave a history of contact or showed suspicious symptoms were referred for a tuberculin test and a roentgen-ray examination.

42 or 3.6 per cent had tuberculosis of the childhood type
12 or one per cent had pulmonary tuberculosis
5 or .4 per cent were bone and joint cases

These percentages are almost identical with those found in the school examinations in Chautauqua, a neighboring county, where:

1.45 per cent of 1,900 children examined had pulmonary tuberculosis

.4 per cent had bone and joint tuberculosis ¹¹

In 1924, 1925, 1926 the total number of underweight children in both rural and urban schools of Cattaraugus was 1,139 or 45 per cent of the total estimated number. Of these, 42 or 3.6 per cent had the childhood type of tuberculosis.

A review of the clinical records of the 3,440 cases under twenty years that had been examined up to July, 1926, showed that 1,757 or 51 per cent were more than 10 per cent underweight. Many of these were also contacts. One hundred and fourteen of the 1,757 were diagnosed as tuberculous either active or inactive, the percentage of tuberculosis found increasing in direct proportion to the degree of underweight.

Chautauqua County, New York. Rathbun, in a study of 3,678 school children by means of roentgenological examinations, found that 3.3 per cent had tuberculous tracheobronchial lymph nodes.¹²

Massachusetts. In 1924 the Massachusetts Department of Public Health began a ten-year program to examine the school children of the state. The purpose of these examinations was to find the children showing evidence of tuberculosis and to get them under supervision and treatment before an advanced or serious form of the disease became manifest.

Clinics began to function in 1924. During the first three years an effort was made to examine only the children who were 10 per cent or more underweight and those who were known contacts. Among the children examined, there were, however, many who were average or overweight. When the results of these clinics were tabulated, it was found that many of the children who were listed as neither contact nor underweight had definite lesions. During the next two years, 1927 and 1928, 51,000 children were examined.

This group represented a cross section of the school children in the cities and towns of Massachusetts below the high school grade.

An analysis of the results showed that 28 per cent reacted to the tuberculin test; 1.5 per cent had the childhood type of tuberculosis, and 3.4 per cent were classified as suspicious cases. One case of adult type of tuberculosis was found in each 3,200 children examined.⁹

TABLE 1

THE RELATION OF POSITIVE VON PIRQUET TEST FOR AGES AS SHOWN IN 42,071 CHILDREN EXAMINED BY MASSACHUSETTS HEALTH DEPARTMENT ^a

Age	5	6	7	8	9	10	11	12	13	14	15
No. examined	902	2,525	3,653	4,313	4,673	5,230	5,447	5,451	4,789	3,168	1,920
No. positive	188	511	814	1,031	1,143	1,463	1,559	1,660	1,649	1,057	666
Per cent.....	20.8	20.2	22.2	23.9	24.4	27.9	28.6	30.4	34.4	33.3	34.6

^a Chadwick, Henry D., and Zacks, David.¹³

During a period of three years 42,071 children were examined and given the Pirquet tuberculin test by the Department of Public Health of Massachusetts. An analysis of the results of this examination revealed the following:

A gradual upward trend of incidence of tuberculous infections from

21 per cent at the age of five to

28 per cent at the age of ten to

35 per cent at the age of fifteen, with

28 per cent the average for the whole group

Different sections of the same city may show a wide variation in the percentage of reactors—in one city of 60,000, where 7,312 children were examined, the number of children reacting to the tuberculin test in different school districts varied from 11 to 60 per cent

Cases of chronic pulmonary tuberculosis *expose* and *infect* more children than the acute cases who live a much shorter time

Crowded living conditions afford more opportunities for contact and congested areas show a higher percentage of infection

Twice as many reactors are found among children with a history of direct contact with a case of pulmonary tuberculosis

The majority of small towns show a little less than the average percentage of the state as a whole, and in a few rural towns with a scattered population and less than the average number of pulmonary tuberculosis deaths, there were as high as 38 per cent reactors. Bovine infection may enter into the situation

Susceptibility to infection appears to be equal in different nationalities under similar conditions for contact. The boys of the Irish, Canadian, and Teutonic groups showed a much higher incidence of infection than the girls.

The tuberculin survey made in 1917 by the Framingham Demonstration and the one made in 1926 by the State Clinic for the age group six and seven years showed a 23 per cent reduction.

Three important factors have operated to bring about a reduction in the number of infected children:

1. A steady decline in the death rate means that fewer persons with tuberculosis are at large in the community to spread infection
2. The state has a little more than one bed for each tuberculosis death in which to segregate cases of tuberculosis and so further reduce the foci of infection in homes of patients
3. The use of pasteurized milk.¹³

Philadelphia. Tuberculin tests of school children of Philadelphia showed that at the age of five years 37.7 per cent, and at the age of eighteen 90.2 per cent, were infected. These figures indicate that there has been no significant diminution of the incidence of tuberculosis infection during childhood to correspond with the diminution of mortality in recent years. In this survey:

Pulmonary tuberculosis, recognized by roentgenological examinations in association with symptoms and physical signs, was found in .5 per cent of children attending schools, being more frequent in high school pupils than in children of elementary schools

Latent apical tuberculosis, recognizable in roentgen-ray films, was found in one per cent of adolescent children (high school age) and was more frequent in girls than in boys

Latent tuberculous infiltration of the lung of childhood type was found in more than one per cent of children

Latent tuberculous foci in lungs and tracheobronchial lymph nodes were found in more than 10 per cent of the school children. This may be the precursor of pulmonary tuberculosis

Pulmonary tuberculosis, recognized by roentgen rays, together with symptoms and physical signs, are found more than twice as often in adolescent girls as in boys of the same age and is approximately four times as frequent in colored as in white children of high school age

American-born children of Italian parentage have shown a low incidence of tuberculosis infection as indicated by the tuberculin test. In Jewish children the incidence of the positive reaction has been approximately the same as that of other children.

Accurate information concerning the frequency of infection at different ages in children of different localities, preferably repeated at periodic intervals, would give valuable information concerning the epidemiology of tuberculous infection.

The evidence obtained indicated that tuberculous infection may spread within schools, but under existing systems of medical school inspection this seldom occurs.¹²

North Carolina. In a study of 25,048 school children, which included children from all conditions of life, white and

colored, rich and poor, rural and urban, McCain¹⁵ gives the following figures on results of tuberculin tests:

TABLE 2

RESULTS OF TUBERCULIN TESTS IN NORTH CAROLINA

	<i>Total</i>	<i>Per cent</i>	<i>Colored</i>	<i>Per cent</i>	<i>White</i>	<i>Per cent</i>
Number given tuberculin test	25,048		2,498		22,550	
Number negative reactors.....	19,389	77.41	1,815	72.66	17,574	77.93
Number positive reactors.....	5,659	22.59	683	27.34	4,976	22.7

Results of study of 5,659 positive tuberculin reactors:

3,602 found not tuberculous

674 classified as suspicious

431 with demonstrable tuberculosis

That is:

346 or 1.53 per cent of the 22,550 white children, or 6.95 per cent of 4,976 reactors had demonstrable tuberculosis

85 or 3.21 per cent of the 2,498 colored children, or 12.44 per cent of 683 reactors had demonstrable tuberculosis^a

^a McCain, P. P.¹⁵ *Special Education*,¹⁰ p. 431.

Incidence and Conditions Affecting

Lack of Reporting. Not only discovery at the earliest possible moment but immediate reporting of cases is important, both for the treatment of the individual involved and for the protection of those not infected.

The results of a study of 4,259 cases occurring in New York State showed that nearly one-half of the cases which terminated in death had not been reported when death occurred and that less than 25 per cent of the total had been reported more than a year before death. Albert E. Plunkett sums up the situation as follows: "These figures present a very discouraging picture of case reporting in this country and should be considered a challenge to both official and unofficial groups interested in this phase of public health work."

Age. If the tuberculin reaction is to be relied on, practically all infants are born free of tuberculosis. While no age is exempt, the young infant, when exposed, is more likely to contract the disease than an older child or an adult and the prognosis is more grave.

Pirquet found that in childhood the incidence of infection increased with advancing years, from 5 per cent under one year to 93 per cent at thirteen. On the other hand, Armstrong reports that 54 per cent of the children he examined were infected at the age of six, and Sill discovered infection in 50 per cent of the children between the ages of twelve and thirteen years.

Hetherington and others found that at the age of five years, 37.7 per cent of the children in a city in Massachusetts were infected with tuberculosis, and at the age of eighteen, 19.2 per cent.

A recent tuberculosis survey of the incidence of tuberculosis lesions in pupils of high school age, between the ages of twelve and eighteen, in Philadelphia showed that .6 per cent had manifest tuberculosis, .8 per cent latent apical, and 1.2 per cent latent infiltration of the childhood type.

The figures given by Myers covering tuberculin reactions among 6,000 girls and boys in the outpatient department of the Lymanhurst School for tuberculous children in Minneapolis shows the maximum reaction, 60 per cent, to be at the age of sixteen in both boys and girls; whereas under one year the reaction is 39.3 per cent, and in the first and second years 48 per cent, a figure which holds with only slight increases up until the *twelfth* year, *after which it increases constantly up to sixteen years* and then falls off again to 49.15 per cent up to the age of nineteen.⁸

It seems that after the twelfth year the picture changes. More evidences of childhood type of tuberculosis are seen at this age than at any previous time and the adult type of tuberculosis is found with much greater frequency than in infancy and childhood.⁸

Sex. Observations indicate that sex and race modify both the frequency and the severity of tuberculous infection in school children. Girls react to tuberculin somewhat more often than boys, the difference being least between the ages of ten and fifteen. Characteristic pulmonary foci and corresponding lesions of lymph nodes are seen by roentgenological examination slightly more frequently in girls than in

boys. Much more remarkable are the prevalence and severity of infiltrating lesions of the lungs in adolescent girls. In the period between twelve and twenty years of age—there were a few pupils over eighteen—recognizable infiltration of the lung parenchyma was twice as frequent and usually much more advanced in girls than in boys. This observation is in accord with the greater mortality of girls from tuberculosis during adolescence and in early adult life.

Lees and Myers in a study of 2,093 university students found a difference of incidence between the sexes of approximately 6 per cent.

In the Massachusetts study, however, the boys of the Irish, Canadian and Teuton groups showed a much higher incidence of infection than did the girls.

Nationality. Although tuberculosis is not uniformly distributed among the different peoples of the earth, under similar conditions susceptibility to infection appears to be equal in different nationalities.¹⁴

Locality. The incidence seems to vary between cities and rural districts. In 1915 Veeder and Johnston applied the tuberculin tests to 1,321 children of St. Louis and found that at the ages of twelve and thirteen 48 per cent were positive.

Slater in a later study (1924) of 1,654 school children from small towns in a rich farming district found an average of only 10 per cent infected.

Caspen reported that 41 per cent of school children in the larger cities and 25 per cent in the smaller towns of his county reacted positively. Mattill and Fenger found approximately 22.5 of the school children of small towns and rural communities reacting positively, while in another rural town Cross found about 22 per cent of the school children with positive tuberculin reaction. Studies from rural communities in Minnesota show an average incidence of from 10 to 23 per cent among school children.⁸

Korns in his article on "Tuberculosis Infection in School Children" states:

Among 1,103 apparently healthy school children between the ages of five and nineteen from farms and villages of Cattaraugus County,

112 or 10.2 per cent reacted to a quantitative intracutaneous tuberculin test. The infection rate in thirteen villages was 12.6 per cent as contrasted with 6.6 per cent on the farms. The rate among those who have lived since birth within the county was 7.6 per cent, while among those who have resided part of their lives outside the county the rate was 21.1 per cent.¹⁶

Of 6,000 children examined at the Lymanhurst Hospital School for tuberculous children in Minneapolis, 50.4 per cent reacted positively to tuberculin. This, however, was a more or less selected group of children. In the same city the tuberculin test was applied to 2,118 boys and girls of school age who were apparently normal, and 48.76 per cent of the boys and 45.87 per cent of the girls reacted positively to tuberculin. Incidence reports from Philadelphia showed that 72.6 per cent of certain schools reacted positively.

In a study of 2,093 university students, Lees and Myers found little difference between urban and city dwellers.

Incidence of tuberculosis and its death rate differ widely between different groups of population even in the same time and place. Living conditions, or an occupation predisposing to tuberculosis, have a marked influence on the spread of tuberculosis.

Exposure. "The tuberculosis of a community is reflected in its children," that is, the number of children infected in any community will depend to a large extent upon the incidence of the adult type of tuberculosis in the community, and to a lesser degree upon economic conditions and modes of living. Ten per cent may react, as Slater found in a rural community, or 90.2 per cent as Hetherington found in a great city.⁸

"Tuberculin reaction shows that infection occurs before the fifth year in 80 per cent of the children of the families having a member with open tuberculosis and in only 20 per cent of the children of the families not harboring the source of contagion, according to the report of Opie and others on tuberculosis in public school children in Philadelphia.¹²

Myers⁸ in his investigation found that the incidence of

tuberculosis infection in infancy depends upon the opportunities for exposure, varying from one or 2 per cent with no known exposure to 100 per cent among those with definite and prolonged exposure, and that the number of reactors increased with the opportunities the child has for contact with tubercule bacilli spreaders, with twice as many reactors among children with a history of direct contact with a case of pulmonary tuberculosis as among those without such contact.

Crowded living conditions afford more opportunity for contact and congested areas show a higher percentage of infection, according to *Child Labor*.¹⁷

Physical Condition. According to the report of the Committee on Communicable Disease Control, there is no correlation between tuberculous infection as determined by the tuberculin test and diminished body weight.²

Opie, Landis, McPhedran and Hetherington¹² also maintain that there is no correlation between tuberculous infection as determined by the tuberculin test and diminished body weight.

Douglass¹¹ in his report, however, says that the examination of underweight children has proved to be a valuable phase of the tuberculosis program. Many of these children are potential cases of tuberculosis. By discovering them early and providing hot lunches and extra rest periods, together with home supervision through nursing service, in order to secure the correction of physical defects, the possibility of future breakdown is lessened. At the same time, it should be emphasized that school children who are not underweight should also be examined for tuberculosis.

Physical defects must be taken into consideration. Of the children examined in the Cattaraugus County study, to which reference has already been made, 31 per cent (approximately) had no major physical defect, 31 per cent had one, 27 per cent had two, 9 per cent had three and 2 per cent had four or more. Frequency of physical defects is practically the same among boys and girls.¹¹

Pasteurization of Milk. Incidence varies also with the amount of pasteurized milk used in a community. "The wonderful reduction in tuberculosis in children following the introduction of pasteurized milk presages what might be expected for pulmonary tuberculosis if the active vectors of the infection could all be hospitalized during the infective stage."¹⁴

Mortality

Tuberculosis remains one of the major causes of deaths, standing second among communicable diseases.

Age. Tuberculosis (all forms) averages about 16 per cent of its total deaths under twenty years, 1.5 per cent under one year, and only 4.5 per cent under five years.

Mortality statistics indicate that during the first six years there is less mortality among females than males. After this age the reverse is true, especially during adolescence.

TABLE 3

MORTALITY FROM TUBERCULOSIS AMONG TEEN AGE GIRLS AND BOYS^a

AVERAGE AGE WHEN DIAGNOSED			GROUPED BY SEX				MORTALITY				Total Per cent
Girls	Boys	Average of Total	Girls		Boys		Boys		Girls		
			Num- ber diag- nosed	Per cent	Num- ber diag- nosed	Per cent	Num- ber	Per cent	Num- ber	Per cent	
13.36	16.33	15.95	172	71.1	70	28.9	12	4.9	35	14.4	19.5

^a Myers, J. A.⁸

The death rate from tuberculosis in the teens group has not declined in the last decade as rapidly as at other periods, nor as rapidly in girls as in boys of this age. From fifteen to nineteen years the death rate for girls is 75 per cent higher than that for boys of the same age, while from twenty to twenty-four years it is approximately 20 per cent higher for women than for men. Excessive expenditure of energy in educational, social and remunerative activities may be a contributing cause. The fad for reduction of weight may also play a part.

Nationality. Among the Negro race in this country, the

mortality rate from tuberculosis in many localities is three to four times as great as the rate for the white race in the same locality.¹⁸

In different localities, Negro tuberculosis death rates vary by several hundred per cent according to differences of environmental conditions—housing, sunlight, ventilation, cleanliness, freedom from overcrowding. Diet may also play a part in the Negro susceptibility to disease.

TABLE 4
TUBERCULOSIS DEATHS AND DEATH RATES
FROM ALL FORMS OF TUBERCULOSIS
PHILADELPHIA, 1900 TO 1928

Year	DEATHS PER 100,000		
	Total	White	Negro
1900	239.6	197.6	448.2
1905	237.5	.....	.....
1910	216.8	198.7	444.0
1915	184.6	163.7	437.5
1920	137.3	118.9	353.7
1925	106.1	81.9	315.9
1928	84.4	64.0	300.9

Table 4 is a record of deaths and death rates from all forms of tuberculosis in Philadelphia, 1900 to 1928.¹⁹

TABLE 5
DEATHS FROM TUBERCULOSIS UNDER TWENTY YEARS OF AGE ^a
DEATH RATE PER 100,000 IN REGISTRATION STATES

Year	Total	Urban	Rural	In registration cities of 100,000 or more
1910-1914	145.7	166.8	121.4	182.9
1923-1927	83.3	84.4	86.5	94.4

^a Adapted from *Communicable Disease Control*.²

In this Philadelphia survey it was found that the death rate for all foreign-born whites was 22 per cent higher than for native-born whites. Italian born residents had the lowest rate for all racial groups.²⁰

Locality. The death rate varies according to the locality.¹⁰

PROTECTION AND TREATMENT

In any program of protection against tuberculosis in childhood, three outstanding facts must be emphasized:

Two types of tuberculosis exist in childhood and the treatment of the two types is quite different. The treatment of the childhood type is aimed toward the protection of the child. In the adult type, the possibility of infecting others must also be considered.

Clinical signs are sometimes not definite enough to distinguish the so-called childhood type of tuberculosis, and diagnosis must be made through the use of skin reactions and roentgen-ray plates.

In the adult type, which becomes more common in the adolescent age, the symptoms can be detected by the usual clinical examinations by the physicians. These are usually substantiated by roentgen-ray.

Medical Principles

The underlying principles involved in the protection of tuberculous children include early detection;¹⁰ early provision for adequate medical service and medical care, including restriction of activity to conserve strength and to prevent undue fatigue; provision of adequate diet; maintenance of personal and environmental hygiene, and protection against transmission to others.

Detection of the childhood type of tuberculosis, as has already been said, is difficult. Symptoms may be so slight as to pass unnoticed, or may be those of a severe cold or pneumonia. Physical signs are frequently of no avail. Since clinical signs may be lacking, diagnosis is usually made through the use of the special skin reactions, and roentgen-ray plates.

Tuberculous infection is recognizable by the tuberculin test but the test cannot be used to determine its activity. Roentgenological examination is the only means by which the extent of latent tuberculous lesions can be determined. All

children known to have been exposed to open tuberculosis should receive tuberculin tests and, if positive, a roentgenological examination irrespective of everything else.

Diagnosis

According to Chadwick,⁹ clinical diagnosis of tuberculosis depends upon a consideration of the following factors: history, symptoms, physical signs, tuberculin test, roentgen-ray evidence, and exclusion of other causes that might produce similar conditions.

History. The history of the exposure of the case is of great importance.

Inquiry should be made as to whether the patient has been intimately associated with any person who has had pulmonary tuberculosis. Prolonged exposure of a child to a patient with pulmonary tuberculosis usually results in infection. . . . The analysis of the examination of 25,000 Massachusetts school children shows that four times as many cases of the childhood type of tuberculosis and twice as many cases of the adult type of tuberculosis were found in children said to have been exposed to pulmonary tuberculosis, as among children not so exposed.

Opie and McPhedran found seven times as many cases of disease in children who had a history of exposure to a case of pulmonary tuberculosis, as among other children. Rathbun found nine times as many cases.

"Infection from milk or dairy products accounts for some of the infection among children. The prevalence of tuberculosis among cattle is so great that infants and young children can be safeguarded against the possibility of bovine infection only by the use of pasteurized milk."²¹

If there has been a history of pleurisy with effusion, which occurs rather frequently in children, and if no other cause is known it should be considered due to tuberculosis of the pleura. The symptoms accompanying this condition are often so slight that the presence of the fluid is unsuspected, and the condition can be easily overlooked if routine daily temperatures are not recorded. This is not done in the home,

and therefore, a child might have a pleuritic effusion and the febrile symptoms that accompany it might go unnoticed, or if noticed be attributed to a cold.

The usual symptom is a sudden rise in temperature of two to three degrees which lasts for a few days and then subsides. There may be no pain to attract attention to this condition, according to Chadwick.⁹

The roentgenograms of 8,838 Massachusetts school children from five to fifteen years showed one in every 736 children to have pleural effusion. These children were attending school and so could not have been considered ill by their parents.

A study of the roentgenograms of 2,100 children from three to seventeen years of age treated in the Westfield State Sanatorium (Massachusetts) revealed the incidence of pleurisy with effusion to be one in forty-five. This group of children had been sent to the sanatorium because they were considered tuberculous.

Physicians who examine children in the public schools should be better informed concerning the significance of pleurisy with effusion. Often it is the first manifestation of tuberculosis and if the patient is treated before the disease advances any further, good results are frequently obtained.

Symptoms. In infants the symptoms may vary from nothing to temperature elevation, loss of weight and cough. Very frequently the symptoms are those of an acute cold; again they are those of mild pneumonia. (Meyer.)⁸

Many children with the childhood type may have no symptoms, although the lesion is progressing.⁹

In the teens symptoms may be entirely absent for a long time after infection has taken place. When symptoms do appear they may be those of an insidious onset. Catarrhal and hemorrhagic onsets are also seen.

There seems to be no correlation between tuberculous infections and diminished *body weight*. Either the childhood or adult type may be found in overweight, average weight or underweight children.⁹ Therefore, many cases of tuberculosis will be missed if only underweight children are examined.

Those in apparently excellent condition may have an active focus of the disease.

One symptom, *undue fatigue*, a tendency to tire easily, is often noted and may be said to be the most common symptom in these children.

During the stage of pulmonary infiltration, cough may occur. It is not, however, constant even in this phase of the disease, and if present is often attributed to a cold. When the disease is manifest only in the tracheobronchial glands, there may be no cough.

A persistent temperature of 100° F. rectal is suspicious. Tuberculosis must be considered in all cases with persistent fever.

Physical Signs. A diagnosis of some phases of the childhood type of tuberculosis cannot be made by physical examination only.

Auscultation and percussion are of service only in finding diffuse infiltrations of the lung or such enormously enlarged nodes as are found chiefly in infants.

Slight infiltrated areas, tuberculous nodules in the parenchyma, and most lesions of the tracheobronchial glands cannot be demonstrated by physical examination.

As a rule only diffuse infiltrations or consolidations of the parenchyma give rise to abnormal physical signs.

Tuberculin Test. Cutaneous tuberculin tests must be applied in every case. As stated, a positive reaction to the tuberculin test always means infection with tubercle bacilli, but it does not necessarily indicate whether the disease is latent or active. The Mantoux or intracutaneous test is more accurate and with it a slightly larger number of reactors will be obtained than with the Pirquet test.

Roentgen-ray Evidence. A roentgenogram is indispensable in the examination of a child's chest. It is the only means by which the position and extent of latent tuberculous lesions can be determined. Without it a positive diagnosis of the childhood type of tuberculosis cannot be made. A physician is not justified in excluding tuberculosis without checking his

physical examination of the chest with the evidence that only a roentgen-ray film can give.

Roentgen-ray studies have shown that lesions are present months, even years, before symptoms develop. There are two groups of lesions peculiar to the childhood type of tuberculosis that should be looked for in a roentgenogram—the parenchymal and the tracheobronchial. In a child calcified nodules and glands indicate a diseased condition that shows a tendency to heal. After twenty years of age calcified lesions in the lung may be disregarded, since they are evidences of an old tuberculosis process that has probably healed.

Summary of Diagnostic Points. The outstanding diagnostic points of tuberculosis of the childhood type *in infants* are:

- History of exposure
- Unexplained fever, even though low, if continuous
- Positive reaction to the tuberculin test
- Definite involvement of the parenchyma, lung hilum, or both as revealed by roentgen-ray examination
- The demonstration of tubercle bacilli.⁸

The diagnostic points in *children* are:

- History of exposure
- Symptoms, if present, are very important in childhood—the first may be mistaken for a bad cold
- Low grade fever
- Undue fatigue
- Physical examinations
 - Tuberculin test
 - Roentgen-ray plates.⁸

In the adult type, which is common in the *adolescent*, the symptoms can be detected by the usual clinical examinations.

Case Finding

Two plans of procedure used in case finding in Massachusetts are here presented. The first plan costs more than

twice as much as the second. The second is effective in finding cases in need of treatment.

Plan 1. For communities where efficient medical service is not available.

History obtained from parents by nurse.

Inquiry to learn if there has been a known exposure to a case of pulmonary tuberculosis.

Record of previous illnesses, with approximate date of each, especially of those that have occurred during past year.

Careful inquiry as to frequent colds, cough, bronchitis, influenza, pleurisy, empyema.

Weigh, measure and record actual weight and average weight as computed on a standard height and weight table.

A physical examination—child stripped to waist.

Condition of teeth and tonsils recorded.

Evidence of adenoids, nasal obstruction or discharging ears and the presence of cervical glands or goiter, noted and recorded. Cervical glands that are only palpable need not be recorded.

Evidence of bone or joint disease or spinal curvature noted.

Heart and lungs examined.

Tuberculin test. Result noted on third to fifth day, and reactors listed.

Roentgenogram taken of chests of reactors.

Classification from results obtained from history, examination, tuberculin test and roentgenogram.

The tuberculin tests separate the children into negative and positive groups. The negative group needs no further consideration. The positive or reactor group includes those that are healed and latent as well as those who are active.

A study of the roentgen-ray film separates the diseased children from those who are only infected.

The children are then placed in one of four groups:

Those having the adult type of pulmonary tuberculosis.

Those having the childhood type.

The suspicious cases.

Those having no evidence of disease.

Plan 2. Strictly a tuberculosis finding, this plan is designed to supplement the work of the school physician, and consists of a tuberculin test to locate infected children. Roentgen-ray reactors show those who need further examination.

Physical examination for defects and advice and treatment.

Treatment

General. "Research men have practically proved to us that all tuberculosis is contracted in early life and that actual disease is a result of conditions and circumstances in later life; in other words they have proved to us that in the treatment of tuberculosis, both human and bovine, we are dealing with the end results or the filtrate of ignorance, carelessness, and indifference of the past generation." ²²

Treatment is essential. In spite of the fact that in some cases the disease will heal completely without treatment, it should be instituted in every case of childhood type of tuberculosis. The cases that will heal without treatment cannot be predetermined; nor without a careful, constant supervision can it be determined when treatment is complete.

The kind of treatment will necessarily depend upon the stage of the disease when diagnosis is made. In advanced cases strict bed rest is necessary. Treatment should be continued during the period of latency, but should be of a less drastic nature than during the period of activity.

If the disease is diagnosed after calcium has been deposited in the primary lung focus or the focus has healed by resolution and definite calcium deposits can be seen in the tracheobronchial and hilum nodes, strict bed rest is not necessary unless unexplained fever is present; but most certainly every case should be kept under careful observation because

there is no way of determining how much dangerous material remains around the areas of calcification. Therefore, an attempt must be made to build up and maintain an excellent general condition.

Any physical defects or non-tuberculin condition which may handicap the child's recovery should be removed as soon as possible.⁸

According to the National Tuberculosis Association, two kinds of treatment are indicated for children who have the childhood type of tuberculosis.

The first type of care is to remove the child from the source of infection. In infancy, if tuberculosis exists in the family, the infant should be separated from the infected individual as soon after birth as possible. Every physician should test rather frequently with tuberculin every infant under his care and, if possible, make roentgen-ray studies of chests of the infant's close associates. This is one of the most fruitful fields of tuberculosis work. It is also imperative that a child who has already been infected by the tubercle bacillus should not be further exposed. Isolation of open cases is most important where there are children.

The second type of care is to build up the child's general health, in order that he may be able to fight invading germs. In order to build up and maintain an excellent condition of the child, rest, good *hygienic surroundings*—fresh air, sunlight, and proper food—are essential. When these cannot be obtained at home, institutional care is advisable.

Children with the childhood type of tuberculosis, except those with pulmonary infiltrations having no open lesions, need not be excluded from school. Open air rooms, summer camps and preventoria will give these children conditions that will aid them.⁹

There must be *conservation of energy*. There appears to be a growing tendency to place greater confidence in restricted activity and improved nutrition rather than in air and sunlight, without in any way detracting from the value of the latter.

Tuberculosis children cannot stand as much activity as

can normal children. They should have at least two hours of rest a day, morning and afternoon, and should not engage in strenuous exercise.

Children should be in bed during respiratory infections. At every age, a cough, especially if prolonged after any acute respiratory illness, demands full and careful consideration. Rest is most important, and activities should be gradually resumed only after marked symptoms and all traces of fever have subsided.

Good atmospheric conditions, consisting of temperatures of 65° to 68° Fahrenheit, a relative humidity of 40 to 50 per cent, and slowly circulating air, should be maintained.

Special methods of treatment, such as heliotherapy, should be used only when specially indicated, and under expert guidance.

Children must be helped to develop a *sane attitude* toward their condition, so that, on the one hand, they do not exaggerate their handicaps, and on the other, do not overstrain.

In treatment as in prevention, parents play an important part. In tuberculosis the cooperation of the individual, the family concerned and the medical attendant, exceeds in importance the specific measures for the control and reduction of the disease.

Alertness, promptness and adequate precautions on the part of the parent can often not only avert a communicable disease, but can modify its course.²

Treatment of childhood tuberculosis in *infancy* consists of: immediate avoidance of further exposure; good hygienic surroundings and proper food; conservation of energy; good atmospheric conditions; and special methods where indicated. In *childhood*, treatment will necessarily depend upon the stage of the disease and the individual case. Recent inflammatory processes should have strict bed rest until healing is well under way. Even well cases with calcified processes need regulation of energy expenditure and close medical supervision throughout the period of childhood and the teen ages. Preventoria and special schools are most satisfac-

tory places to keep such cases under observation. Treatment of a progressive case in the *teen* age consists of: strict bed rest, comfortable atmospheric conditions, well balanced diet, and close medical and nursing supervision. Collapse therapy is indicated when the lesion is limited to one lung and usually earlier than it is being done among older age groups. The prognosis is only reasonably good. A great deal depends upon how early the disease is detected, how drastically and how long it is treated. Unfortunately, when many cases are reported because of symptoms, the disease is too advanced to respond well to any form of treatment.⁸

Provision for Adequate Medical Service

The specific recommendations for protection and care depend upon the local conditions, the physician determining which of the many types of treatment should be most effective in a given community. Open air schools, day camps, open air camps, and sanatoria, all have their places and are effective under proper conditions.

Open Air Schools. Under proper conditions treatment may be given at home under the guidance of the family doctor. It may extend to schools where open air or open window classes allow provision for rest, proper food and correct environmental conditions. Lessened work of a scholastic nature is necessary.

Preventoria. There is much discussion as to the use of the term "preventorium." By some it is regarded as an institution to prevent children not yet infected from becoming infected; by others it is regarded as a place where the so-called non-open type of tuberculosis can be treated without danger to others.

Kleinschmidt²³ states that confusion arises out of the fact that "most of us think of a preventorium in terms of brick and stones . . . care is not necessarily dependent on a formal institution but may be carried out in various ways, even without removing the child from its home, . . . there are at present three types of preventoria: those where the

child remains twenty-four hours a day and which are open the year around; those which operate twenty-four hours a day but send the children home for week-ends; those which only operate during the day."

Sanatoria. If the sanatorium be regarded as an institution of training and instruction, as well as a curative agent, so that the patient may return home or elsewhere later with a better knowledge and understanding of his condition and the ways in which it can best be cared for, it is probably on the average the best place yet provided for active cases.

Hospitals. The American Medical Association Report for 1928, covering every state in the Union, gives a total of 508 tuberculosis hospitals with a total of 62,113 beds and 23 bassinets. Six hospitals in Hawaii, the Philippine Islands and Porto Rico contain a total of 1,042 beds for tuberculosis. Porto Rico, with a million and a half population, has a single hospital, containing 30 beds, while Hawaii, with less than 350,000 inhabitants, provides for 4 hospitals and 812 beds.

Similar discrepancies are seen in the United States. Alabama, with two and one-half million population, has 4 hospitals and 224 beds, whereas Arizona, with less than a half million population, has 24 hospitals and 1,828 beds devoted to tuberculosis. For the year 1928, 508 hospitals for tuberculosis, with 62,113 beds, had an average percentage of 80.3 of the beds occupied and an average number of patients of 49,877. The decrease in patients to the same number of hospitals available indicates a lessened demand and probably reflects the general lowering of the tuberculosis incidence or rate among the whole population. It may be that the general hospital for tuberculosis is reducing the number of patients in each special tuberculosis institution.

Summary. The following children with certain widely prevalent types of tuberculous infection do not require special care:

Those with a positive tuberculin reaction with no lesions demonstrable by roentgenological examination even

though in contact with open tuberculosis—frequent examinations are essential

Those with well calcified parenchymal lesions or associated with tuberculous tracheobronchial lymph nodes demonstrable by roentgen ray which appear to be well calcified, who are in good health and not living in contact with an open case of tuberculosis or do not react to the tuberculin test.

Children with certain other conditions should receive special care in nutrition, should attend special tuberculosis classes, be admitted to a preventorium, if one is available, or have some other régime adapted to their needs. These conditions are:

Manifest pulmonary tuberculosis with no physical signs or roentgenological evidence indicating that the lesion is active. (Such children have usually been treated in a sanatorium and have been discharged because the disease is regarded as arrested. Sputum must be demonstrated to be free from tubercle bacilli.)

Latent apical tuberculosis. (Lesions that in roentgenological films have the appearance of activity, or are progressive on repeated roentgen-ray examination, should receive sanatorium treatment.)

Latent tuberculous infiltration of the lung, often associated with tuberculosis of the tracheobronchial nodes. In some instances, particularly in older children, these lesions are scars of preexisting infection. (Evidence of activity or extension indicates the need of sanatorium treatment.)

Tuberculosis of the tracheobronchial lymph nodes, even though partly calcified:

When the child is still in contact with open tuberculosis

When reaction to tuberculin is unusually intense

When the lesions are unusually large or very numerous

When they are associated with evidence of impaired health, perhaps not referable to tuberculosis, and including advanced underweight.¹²

Children with the following conditions should have special care in a sanatorium:

Diffuse or pneumonic parenchymal lesions; multiple parenchymal lesions with or without extensive tracheobronchial lymph node involvement; uncalcified or slightly calcified tracheobronchial lymph nodes so large that the masses project outward from the hilum and are clearly outlined against the lung parenchyma.²

High school pupils with latent tuberculosis do not disseminate the disease and under supervision are not a source of danger. For these pupils the curriculum may be modified and arrangement made for special rest hours, for which a rest room may be provided, and extra nourishment when needed. The aid of parents should be sought in promoting health habits. There should be no undue strain of any kind. Strenuous exercise and competitive athletics are forbidden.

The American Medical Association Hospital Report states that the use of general hospitals for tuberculosis has been proved entirely feasible with proper care and technique, and it is economically preferable in certain instances.^{7, 24}

PREVENTION

In view of the fact that active immunization against tuberculosis is still in the experimental stage, general methods must be depended upon for prevention.

The medical principles involved in the prevention of tuberculosis include: finding of cases, investigation of sources of infection, isolation of open cases to prevent transmission of the disease, personal hygiene, sanitation, and education.

Case Finding. The first postulate to the control of tuberculosis in a community is that the tuberculosis service shall have access to the cases, and in order to do this, cases must be sought and found. This may be accomplished in two ways: surveys, with tuberculin tests and roentgen-ray examinations, and reporting.

"Tuberculin tests applied to all children of a community is the best method of approaching the tuberculosis problem." If it is not possible to give all the children in a community the tuberculin test, at least all contacts of known active cases—contacts of patients who have died of this disease during the last ten years, contacts of suspected cases on record, and children markedly underweight—should be given the tuberculin test.

All children who react positively should be given a roentgen-ray examination to find out: whether there is evidence of the disease—not every positive reactor will show evidence of childhood tuberculosis; the extent of evidence of the disease.

Investigation of Sources of Infection. The next step consists in searching out the undetected cases of the adult type of tuberculosis in the community and teaching them how to prevent the spread of tubercle bacilli to others.

Tuberculosis is largely a family disease. When an open case exists in the family the infection often extends to 80 per cent, and in some cases, even to all of its members.

When a case of tuberculosis is discovered in a family, all members, and as many contacts as will consent, should be examined, to locate any unrecognized spreader of tubercle bacilli and to prevent him from doing further mischief.

If the case is an adult with pulmonary tuberculosis, the children who have been in contact with the case should have a tuberculin test and the reactors should be roentgen rayed.

If it is a child with tuberculosis of any type, the adults should have physical examinations and roentgen rays of the chest to reveal fibroid cases that may be of long duration but often show few or no physical signs. Because these cases are unrecognized, they are a great menace to the community.

The children who manifest no evidence of disease, except positive tuberculin tests, should have roentgen-ray examinations every six months, preferably every three months, as long as health appears good, and oftener if symptoms appear. All infants who react negatively should have the test repeated annually, and if there is known exposure, a test every three months is not too often.

Children with no contact exposure should have frequent periodic examinations, including the tuberculin tests for all who have previously reacted negatively, and roentgen-ray films for all who have previously reacted positively.

It has been found that among children from families in which there is no tuberculosis, the incidence of the tuberculin reaction increases gradually from zero at infancy to almost 100 per cent at the age of twenty. Infection evidently occurs in part outside of the family. The possibility suggests itself that transmission takes place within schools, for during the ages from six to sixteen children are in intimate contact with one another. Furthermore, our knowledge of the spread of latent disease within families has suggested that infection may spread similarly within schools whenever open tuberculosis makes its appearance there.

Isolation. When a physician finds an infected child or adult, he not only seeks the source of infection, and having found the open case, recommends careful tuberculin tests and roentgen-ray examination of every infant who has been in contact with the patient, but he also takes steps to insure the isolation of the patient. For the non-cooperative case, isolation should be compulsory.

Reporting. Until the living cases of tuberculosis are reported as soon as possible after diagnosis, no successful campaign can be carried on for prevention and control of the disease.

In health department practice, it is essential that the law requiring reporting be rigidly enforced.

Supervision and frequent reexamination of reported cases is another important step in the prevention program. Constant supervision and frequent examination are necessary to keep the records up to date and deductions as much in line with the truth as it is possible to make them.

Treatment of cases with childhood tuberculosis is in itself a preventive measure because it lessens the possibility of the adult or fatal type of tuberculosis in later life.

Pasteurization, or boiling of milk, is another preventive measure.

Education. The individual, the family, and the community are all involved in the prevention program and must be taught to understand the importance of:

Fitness of the individual to resist the disease if exposed to it

Avoidance of unnecessary exposure

Prompt recognition of the disease if contracted

Adequate provision for treatment of the case and protection of others.

Responsibility of Family and Community for Prevention

Family. The proper attitude of the family toward the infected member is important. The family should cooperate with the physician, the schools, the public health officers, the tuberculosis nurse and the voluntary agencies in caring for the infected member and protecting other members of the family.

Community: The school. Arrangements should be made for every child to receive the tuberculin test and for roentgen-ray examination of all positive reactors, and for supervision and treatment of those giving evidence of the disease.

The private physician should report all cases to the health department. The community should cooperate with the health department in establishing tuberculosis clinics, maintaining a full time tuberculosis nurse, open air schools where needed, and a county sanatorium.

There should be a correlation of the services of official health and educational agencies, of voluntary agencies and social service agencies.

The community prevention program includes not only provision of clinics and other machinery for diagnosis and discovery of cases by tuberculin tests and roentgen-ray examination, but provision of facilities for:

Prevention of spread of infection

Care of home patients by instruction or nursing service

Community control of milk supplies—pasteurization

Education of prospective mothers in prenatal care, in the importance of breast feeding for infants, in the value of proper food, rest and sleep for older children
Education of parents of the necessity for early correction of defects in children
Stimulation of interest in playgrounds, summer camps, sunshine and fresh air
Improvement of housing conditions
Improvement of industrial conditions
Education in schools to develop a sense of responsibility.

Under the auspices of the community health departments, the prevention program may be carried on by the schools, the private physicians and the voluntary agencies by means of: the diagnostic laboratory; health education services; nursing services; newspaper publicity; pamphlets, leaflets; popular health instruction by means of lectures, moving pictures, radio, and exhibits; institutes for physicians and health officers.

Present Medical and Social Provisions for Prevention

Studies have been made in 23 large cities, ranging in population from 158,000 up to 2,000,000.²⁵ There was an enrolment of 4,831 pupils in the open window classes, of which there are 180, and an enrolment of 2,799 in open air classes, of which there are 76 in these 23 cities. Provisions for social and medical care in prevention of tuberculosis are dealt with in *Organization for the Care of Handicapped Children*.²⁴ Tuberculous infection is not universal.

J. A. Myers, in *Tuberculosis Among Children*, says: "One of the great handicaps in combating tuberculosis today is the belief among physicians that tuberculous infection is universal in later childhood. In certain parts of the world this perhaps is true and in a few places in America it is possibly true."⁸

To quote Doctor Charles Hendee Smith²⁷ on this subject:

It is evident that there are only about half as many children infected at each age in this country as in the first series published

from Europe, and that not over from 40 to 50 per cent of American children in the great cities harbor the bacillus even at puberty. The class of people from which the patients at Bellevue are drawn is almost, if not quite, the worst in the city. They are poor Irish, Italian and Jewish people, with a few Negroes, from the lower East side, living in the most crowded sections. The incidence of tuberculosis among this class is probably higher than among people in the less congested parts of the city.

It is a hopeful sign to find the percentage of positive reactions so low. It means that American children are not all infected by the time of puberty. It also makes the tuberculin reaction an important one.

The value of the tuberculin reaction is generally misunderstood by the medical profession. The impression exists that nearly all children are infected, and therefore a positive reaction means little or nothing. This idea is based on the widely promulgated early European statistics, most of which corresponded roughly to the figures for Vienna.²⁶ But if the amount of infection is so much less in this country, then it is of the greatest importance that those children who are infected should be watched through childhood and guarded against the stress and strain of adolescent life when active or fatal tuberculosis is so apt to break out. It must be remembered that "the army of the tuberculous is recruited from those infected in childhood" and "phthisis is the last verse of a song the first of which was sung in the cradle." These infected children, then, who carry tubercle bacilli in their bronchial nodes or elsewhere, are the ones who need early, correct diagnosis. The Mantoux test provides the means of making it. It should be used on every child who is underweight, anemic or languid or who has an unexplained irregular fever. These children with "tuberculous infection" so called, have true incipient tuberculosis, latent or active. Their disease is generally in lymphatic tissue, where it is easily encapsulated and where scar tissue does no great harm. Under intelligent, watchful care they usually do well. When the disease has involved more important structures, such as the lungs, bones or meninges, the damage is greater, the cure is more difficult or impossible, and the diagnosis has been made too late.

HEART DISEASE

THE term *heart trouble* carries unfortunate associations. Perhaps this is because the thought of disease or injury to

this, the most vital organ of the body, the center of its being, is associated with invalidism, suffering, a sense of hopelessness and defeat. These impressions are in part erroneous. A crippled heart is in many respects often like a crippled hand or foot, a handicap rather than a disabling disease. The true picture is that of a child with capacity for physical exercise in the form of work or play limited to a circle of activity varying with the individual child. The limits of this circle can be established only after careful medical study and supervision. This involves recognition of the degree of the handicap and consequent treatment.

Congenital

Heart disease may be congenital or acquired. Little can be done to prevent the development of congenital cases beyond giving increased attention to the supervision of expectant mothers.

Acquired

Acquired heart disease is the product of many causes. Among children the outstanding cause is rheumatism and the conditions associated with it. In essence, the problem of heart disease in childhood is the problem of rheumatic fever.

Rheumatism as a Factor. Rheumatism is now believed to be a germ disease. The infecting organism seems to have certain favored portals of entry to the body such as diseased tonsils and defective teeth. It not only attacks the heart but affects the brain, the joints and other structures, either together, separately, or successively. The tabulation of physical records of approximately five thousand school children under the supervision of the United States Public Health Service for a period of four years showed that:

Among children whose tonsils had been removed, indicating serious tonsillar infection in the past, 20 per cent had attacks of rheumatism and 4 per cent had heart disease

Of the children with defective tonsils, 17 per cent had rheumatism and 3 per cent had heart disease

Of the children with normal tonsils, only 12 per cent presented any rheumatic symptoms and only nine out of every 1,000 had heart disease.³²

Emerson quotes Ledford to the effect that 86.8 per cent of 250 cases of acute endocarditis in one children's hospital were directly traceable to acute rheumatic fever, chorea, or tonsillitis.³³ These records, which could be extended from other sources, emphasize the importance of rheumatism as a factor in developing heart disease.³²

Other Diseases and Conditions Affecting Heart Muscle. Watchful supervision should be maintained over children recovering from diphtheria, scarlet fever, chorea, and tonsillitis, to prevent any undue strain, either physical or mental, for some weeks after an attack.

Faults of personal hygiene and improper habits—lack of exercise, overindulgence in stimulants, improper food—are also conducive to degenerative changes in the heart muscle. Just how these causative factors affect the heart is not exactly understood. However, they do furnish a clue to the measures to be employed for the prevention and relief of heart disease.³²

Effects. Many persons with diseased hearts are completely unaware of the fact, for in many, probably most cases, heart disease at the onset does not disable the sufferer for ordinary occupations. It is only in the later stages that it incapacitates the patient.³³

Emerson says that heart disease interferes with the work, play, or comfort of at least two million individuals in the United States. And Dublin estimated that heart disease causes a curtailment of two years in the life expectation of women and one and two-thirds years among men.

PREVALENCE

According to Clark in *Heart Disease a Public Health Problem*:³²

Heart disease is particularly a disease of early life. Practically 75 per cent of all cases of heart disease develop in children under ten

years of age, as compared with about 12 per cent in persons over forty years.

Of 17,974 school children carefully examined by medical officers of the United States Public Health Service in Florida, Illinois and Missouri, over 3 out of every 100 had heart disease in the proportion of two functional disorders to one due to an organic lesion.

A survey of New York City school children some years ago showed that at least one per cent of those in the elementary grades had serious cardiac affections; in other cities school medical inspections revealed a ratio of approximately 2 per cent of cardiac children to total children examined.

In large numbers of these cases, histories of tonsillitis, rheumatism, diphtheria and dental disease were disclosed, and there were also many records of measles, whooping cough, and scarlet fever. In many cases it was shown that cardiac conditions closely followed these infections. To our mind, the decline in cardiac death rate among children will be found on analysis to be largely a reflex of the great strides that have been made in control of diphtheria and scarlet fever, of the increasingly intelligent care that is being given to children who have had infectious diseases, of the earlier diagnosis of rheumatism, of the increase in tonsillectomies, and of improved dental hygiene.

At the present time the figures determined by intensive studies on large groups of children, chiefly on those of school age, place from 5 to 15 per cent of these children among the five functional classifications of cardiac involvement now generally recognized.

In recent studies, made among school children in New York City, Chicago, Philadelphia and Boston, the incidence of heart disease was found to vary from .63 per cent in Philadelphia in 1924 to 1.39 per cent in New York in the period between 1918 and 1922, with an average of about 7 cases in every 1,000 children.

In large cities the rate of incidence of organic heart disease in school children probably varies from 5 to 15 in each 1,000 of its population. The prevalence of cardiac conditions, as in tuberculosis, was found to vary greatly in different sections of the same city. It differs also in the same class of

TABLE 6

PERCENTAGE OF SCHOOL POPULATION REPORTED WITH CARDIAC CONDITIONS

Year	City	Per cent affected
1918	New York	1.6
1918-1922		1.39 average
1923	Chicago	.90
1924		1.5
1925		1.7
1924	Philadelphia	.63
1929	(11,578)	.91
1926	Boston	.66

cities in different states. In reality the care with which the children are examined varies in different cities.

In New York, for instance, the figures given in routine school medical examinations for 1918 to 1922 was 13.9 cases for each 1,000. Reexamination of some of these children under more favorable conditions, that is, with clothing removed from the chest, reduced the figure to 7 for each 1,000. Since in a routine examination of over half a million children from the elementary schools of the whole of England and Wales, the incidence of heart disease was 7 in each 1,000 children, this may be taken as a fairly representative figure for estimates of the country, although probably it will range both above and below this rate.

According to the Census of 1920, there were in the United States 45,000,000 children under nineteen years of age. Assuming that, roughly, one per cent of this number may have heart disease, then about 450,000 children in the United States need supervision and periodic examination and advice in order to get the most out of life in spite of their potential or actual cardiac limitations.

In a general way it is known that the rate of incidence of heart disease is affected by economic status. It was also found, at least in the city of Boston, that all races are equally liable to heart disease, but that its prevalence is greater in the more congested than in the less congested areas of the city. In a general way, too, something is known of its geographic distribution, although there is no extensive numerical count. As we approach the South the incidence diminishes;

there is little heart disease in the South and in the far South none. And people living in the country seem less liable to heart disease than city dwellers.

Some Significant Studies

The following studies of heart disease among children made in various states and cities also furnish enlightening data as to the prevalence of heart disease according to type of disease, age, and nationality.

*Boston.*³⁴ In this city, 2,311 children, or 1.93 per cent, of a school population of 119,337 children examined by the school physicians were referred to special cardiac examiners as possible heart cases.

TABLE 7

RESULTS OF DIAGNOSIS OF 2,311 BOSTON CHILDREN REFERRED TO SPECIAL CARDIAC EXAMINERS AS POSSIBLE HEART CASES

Diagnosis	Number	Per Cent		HISTORY					
		School popu- lation	Cases exam- ined	Rheumatic fever		Chorea		Both	
				Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Organic.....	625	.52	27.03						
Acquired....	534	.45	23.09	134	25.09	31	5.8	20	3.7
Congenital...	69	.05	2.98						
Unclassified..	25								
Possible.....	265	.20	11.46						
Potential.....	77	.065	3.3						
Negative.....	1,344	1.1	58.11						

The total number of cases with a history of rheumatic fever alone was 162, with chorea alone 58, with both 32, with nosebleed 135. Eighteen per cent of all the children examined and 25 per cent of the heart cases, had a history of nosebleed. Both sexes were affected about equally with rheumatic fever, but girls were affected with chorea more frequently than boys.

The average age of the children with heart disease approximated twelve years. The average age of the Boston school child is eleven years. The number of heart cases in the school—.52 per cent of the school population—represents not the percentage of heart disease in Boston, but the percentage of children with definite heart damage able to

attend school. In addition to the heart cases in the public schools there were 160 children with organic heart disease in the public hospitals, making a total of 785 cases or .66 per cent in a school population of 119,337. The possible and potential cases added to these brings the number actually attending with heart disease up to .8 per cent. Those in the public schools, plus the number in the hospitals and those sick at home, swell the total to one per cent. Of these, 89 per cent suffer from acquired and 11 per cent from congenital heart disease. It is estimated that 5 out of every 10,000 children are afflicted with the congenital type.

From this study it also seems clear that all races in Boston are subject to heart disease, but that the higher incidence is to be found in the more congested districts—the two most densely populated districts averaging .7 per cent and the four least populated .4 per cent. The fact that the racial groups were the same—Irish, Italian, Jewish and miscellaneous—in the two districts suggests that the economic factor may be extremely important in relation to prevalence of heart disease.

*Detroit, Michigan.*³⁵ In the annual report of the Detroit Department of Health, organic heart disease headed the list of causes of death in Detroit for the year 1929, numbering 2,252 deaths.

The January, 1930, report on city health listed:

603 children with heart disease enrolled in the public schools
 59 of these in special rooms for heart cases and
 544 in open air schools or in open window rooms.

In Table 8, 420 cases are reported:

TABLE 8

CLASSIFICATION AND DIAGNOSIS OF 420 CASES

Group	Number of cases	Recommendation
1	47	No diminished activity
2 A	207	Slightly diminished activity
2 B	130	Markedly diminished activity
3	26	No activity permitted
4	10	No diminished activity

TABLE 8 (Cont.)

Disposition of Case

	Number
Remaining at the end of the year.....	306
Left city without a check-up.....	41
Excluded for illness.....	15
Dropped.....	12
Died.....	11
Transferred to regular classes.....	35

Average gain in weight 5.35 pounds

Record of Work

Grade of work	Per cent	Grade of work	Per cent
Excellent.....	46.5	Poor.....	11.6
Fair.....	37.8	Failure.....	4.1 ^a

^a Detroit Department of Health.³⁵

New York, New York. A study was made by the New York State Medical Society.³³

New York City. In the public schools of New York City in the five years between 1918 and 1922, 18,663 or 1.39 per cent of the children examined were listed as having cardiac defects. A reexamination reduced the number with organic heart disease to .7 per cent, classified as follows: 55 per cent in Class I; 37 per cent in Class II A; 7 per cent in Class II B; less than one per cent in Class III.³³ (See page 241.)

Robert H. Halsey³⁶ in his report of a study of 44,000 school children ranging from six to twenty years of age from 17 schools in New York City gives the following data on heart disease:

- 946 children were examined for heart disease
- 403 of these or 42.5 per cent had heart disease
- 228 (over half) of these cases were organic
- 163 children showed signs which, while abnormal, were not believed to be due to disease.

In making the diagnosis, the occurrence of infections, rheumatism, chorea and so forth, received due consideration. Decayed teeth were found in 90 per cent, enlarged tonsils and cervical glands in 93 per cent of the cardiacs, and 20 per cent were in need of glasses. Doctor Halsey concluded that:

There is a real problem for the school authorities

in the child with heart disease; it is primarily a problem for the medical profession—pediatrician or family physician; careful, daily medical supervision is an essential for any large group of children with heart disease; a practical functional classification is a valuable aid in differentiating individuals or groups and in management; graduated physical exercise can be given to children with organic heart disease, improving the action of the heart, carriage and posture of the child; segregation does not lower the morale of children handicapped by heart disease, but can increase the days of attendance at school and improve their physical and mental condition.³⁶

One thousand *newsboys* of New York City³⁷ were examined. It was found that 1.5 per cent of the boys had some form of organic heart disease. All except 2 were under sixteen. Some form of rheumatic infection had been suffered by 14.4 per cent. Eighteen per cent of those with a rheumatic fever history had heart disease, while only .9 per cent of those with no such history belonged to the cardiac group.

Of all those with any rheumatic infection in their morbidity-history, 2 per cent were cardiacs, while of those with no rheumatic infection of any kind, .8 per cent were cardiacs. Of the cardiacs, over a half gave a history of rheumatic infection, and one-third of tonsillitis. Only one-third had neither tonsillitis nor any other rheumatic infection in their history.

Enlarged or diseased tonsils were found in 9 per cent of cardiacs, in 38 per cent with history of rheumatic fever, in 52 per cent suffering two or more attacks of tonsillitis. Only 37 per cent of those with no such predisposing history had abnormal tonsils.

Whereas Doctor Halsey in his study found 90 per cent of the children examined had decayed teeth, in this study of newsboys none of the cardiacs showed markedly carious teeth. Fifty per cent had good teeth, 38 per cent slightly carious teeth, and 12 per cent had gingivitis.

Enlarged cervical nodes were present in 19 per cent of

cardiac newsboys, as against the 93 per cent in the Halsey study.

Besides the boys with organic heart disease, about one-fifth had functional heart murmurs, sinus arrhythmia or both. These were found more commonly among those with a history of rheumatic infection. Of the two, sinus arrhythmias were more than twice as common as functional murmurs.³³

Mortality

During the last four years the death rate from heart disease has been steadily increasing. In the Death Registration Area of 1920, which then included 37 states and 82 per cent of the total population of the country, heart disease was the third highest in the list of causes of death among children in the period from 1921 to 1927. Twenty out of every 100,000 children from the ages of five to nineteen died of heart disease. In 1926, heart disease was responsible for more deaths among children than scarlet fever, for almost as many as diphtheria, and for two-fifths as many as measles.

Among school children in the United States registration area as a whole, heart disease stands fourth among causes of death. In New York State, outside of New York City, heart disease heads the list of six principal causes of death among children from five to fourteen years of age.

Data obtained on school children in New York City brought out the fact that among girls, heart disease is the leading cause of death and among boys is second only to accidents. Between the ages of fifteen and nineteen it is second in causes of death in both sexes.

The Metropolitan Life Insurance Company³⁸ gives the following data on mortality among children:

Organic heart disease for many years has held first rank among all causes of death—the death toll increasing, not by large year-to-year advances, but slowly and persistently. More than 225,000 persons now die yearly of cardiac conditions, and that despite the work done by organizations provided to aid in the prevention and treatment of car-

diac conditions. This increase, however, has been in the *crude* death rate. When the heart disease mortality data for the various age ranges are considered it is found that the rise in the death rate applies to the higher age group.

In recent years distinct improvement has taken place in childhood, adolescence and early adult life. . . . The decline in the death rate for this condition among children is generally credited largely to control measures against infectious diseases, to increasingly better care of children who contract these diseases, to improved habits of living, and to better personal hygiene.

The New York State Medical Society³³ states that New York stands second among the states in the Death Registration Area of the United States in the number of deaths from heart disease. In 1926, this disease headed the list of seven causes of death in the state (exclusive of New York City), causing 303 deaths in each 100,000, the rate having increased from 241 in each 100,000 in 1916 to 303 in 1926. Tuberculosis, seventh in the list, was the cause of 85 deaths in each 100,000.

In cities of over 25,000, Troy, with a population of 72,265, led with a death rate from heart disease of 304 per 100,000 in 1917 and 450 in 1926. Yonkers, with a population of 116,341, was at the other end of the line, with a death rate of 30 per 100,000 in 1917 and 175 in 1926.

Among the foreign-born of New York State, the highest rates are found among the Irish, 923 in each 100,000, and the German-born, 719 in each 100,000. The English, Scotch and Welsh combined have the next highest rate, 487.

The greatest number of deaths from heart disease occur in the late middle life and in old age rather than in childhood. According to Charles Hendee Smith, this is probably due to increased expectancy of life through control of infectious diseases. Rheumatic fever is the cause of 25 per cent of all cardiac deaths and as such constitutes a tremendous public problem. Deaths from heart disease below the age of forty, those from congenital abnormalities excepted, are almost entirely rheumatic, practically never from syphilis or the degenerative diseases.

Classification

Cardiacs are classified in two ways: (1) with relation to the pathology, or a medical classification; (2) administrative classification. Failure to distinguish between these two objectives in classifying may cause considerable confusion. Since children change from one class to another, according to changes in their physical condition, constant supervision, with frequent reclassification, is a necessity for the best type of work.

Etiologically there are three common types of heart disease—rheumatic in the young, syphilitic in middle age, and arteriosclerotic in advanced age. The causes of the first and second are fairly definitely known. The cause of the third type is still a mystery.

The earlier classifications of disease were based on the pathology reported at autopsy. Later classifications were based on the function and functional power. The present tendency is to study heart conditions in connection with the etiological or positive factor. Rheumatic heart conditions are almost entirely those definite in childhood. A very small percentage of congenital conditions exists, but these may, for most purposes, be ignored except in the individual case. There is a decided need for research on heart conditions as to the etiological factor and the amount of stress and strain which they will stand under varying conditions.

Heart diseases may be divided according to causes as follows:

General systemic diseases in which hypertension is the most striking characteristic symptom

Group resulting from infection by known bacteria, or from unknown or rheumatic infection and the recognized infection of syphilis

Excess of normal internal secretions (thyroid) or some substance acting as a poison, whether derived from living organisms or from mineral or vegetable substance

Neuroses

Changes due to trauma, congenital and unknown causes.

In the administrative classification, emphasis is laid upon the need for an individual program to outline the circle of activity for each individual case, and to help the cardiac to realize, appreciate and recognize the signs whereby he may know when he is getting outside of his allowed circle of activity. These signs are usually shortness of breath, later, swelling of feet, and cyanosis in the advanced stages.

Patients attending a cardiac clinic may be classified as follows:

Class I. Patients with organic heart disease who are able to carry on their habitual physical activity.

Class II. Patients with organic heart disease who are able to carry on a diminished physical activity, (a) slightly decreased; (b) greatly decreased.

Class III. Patients who are unable to carry on any physical activity.

Class IV. Patients with possible heart disease, abnormal physical signs in the heart, but of a character that leads to the belief that they do not originate from cardiac disease.

Class V. Patients with potential heart disease who do not have any suggestion of cardiac disease, but who are suffering from an infectious condition which may be accompanied by rheumatic fever, tonsillitis, chorea, or syphilis.

PROTECTION AND TREATMENT

Many persons with chronic heart disease maintain a fair condition of health for years under favorable conditions. A diseased heart, however, performs its work under a special handicap requiring increased exertion. The exercise of a muscle within healthful limits is followed by increased size and power. There is, however, a limit to the ability of a muscle to accommodate itself to long continued and increas-

ing strain, and if subjected to too much overstrain, it becomes weaker, thinner, and less able to function. In the case of the heart muscle, the increase in size and strength in response to the greater demand on the energy in diseased conditions is called "compensation."

The process of thinning of the heart muscle, or dilatation of the heart, with lessened ability to function, is called *decompensation*, which is characterized by breathlessness, pallor and rapid pulse on slight exertion. The treatment of heart disease depends largely on the presence or absence of symptoms of decompensation.

For purposes of treatment, heart cases have been classified into:

- Cases without symptoms of insufficiency or decompensation

- Cases that previously presented symptoms of decompensation, but do not now present them

- Cases in which symptoms are present

- Cases of possible heart disease characterized by abnormal heart sounds and irregular action without definite structural lesions

- Potential heart disease in persons having rheumatic symptoms, chorea, frequent attacks of tonsillitis, decayed teeth and the like.

Medical principles underlying the protection of children afflicted with heart disease are: early detection; establishment of a regular régime for each child under continuous medical supervision with intelligent cooperation of child, parent, teacher, and all others who come in contact with the child so handicapped. Adequate protection of the child with heart disease involves mental as well as physical care.

The actual treatment, depending upon classification, comprises: limiting physical activities, avoiding emotional excitement, rest in bed for a prescribed number of hours each day, improved nutrition, avoiding the use of drugs, except under the supervision of a physician.

The class to which a case of heart disease belongs must be considered carefully when prescribing exercise. Children who are without symptoms of decompensation and have never presented such symptoms should be encouraged to lead normal lives with the habitual amount of physical activity. They should not be allowed to participate in competitive exercises and physical contests.

Cardiac cases that presented symptoms at some time previously should indulge in diminished activity, slightly diminished if the symptoms are mild, and greatly diminished if the symptoms are marked.

Regulated exercise is of distinct benefit in the treatment of properly selected cardiac cases. The amount of exercise to be given at any one time is determined by the appearance of the symptoms of decompensation. This is known as tolerance. When the tolerance of the individual cases for exercise is once determined, regulated exercises are carried out systematically with improvement, and to an increased extent as determined by the tolerance.

Heart cases should be under constant supervision, with periodic examination by a competent physician.

The period of convalescence and rehabilitation from rheumatic heart disease may be tentatively divided into three stages: (1) the stage in which the infection may be overcome, (2) the stage of regaining cardiac compensation, (3) the stage of development of cardiac reserve and accommodation.

The first stage is usually spent in a hospital, or under hospital-like conditions in the home.

The second, during which the heart muscle is eliminating the products of toxic invasion and the heart is reestablishing itself as a diligent servant of the body under greatly reduced activity, should be spent in a convalescent home or cardiac sanatorium where the patient is under careful supervision and is allowed to stay up for a few hours during the day.

The third, the period of preparation for resumption of family and community life, may be beneficially spent in the

routine of a convalescent camp. Properly conducted cardiac camps for convalescent children without disease tend to make the individual aware, not of his liabilities, but rather that his assets are being developed, so that within his limitations he may contribute his share to the welfare of his community.

The patient's routine should be established on an individual basis. Basically, regulations consist of proper protection by suitable clothing, with especial care to keep the extremities warm and dry, proper food, and rest in bed.

Rest in bed is of special importance in the treatment of cardiac cases presenting symptoms of decompensation, such as shortness of breath, pallor, rapid heart action. Rest involves a comfortable bed in a well ventilated room, and sufficient covering for warmth. Quietness and darkness add to the possibilities for obtaining rest. Since the child need not sleep all the time, he may spend part of his time in a reclining chair.

The intervals at which rest must be taken and the length of the rest periods are determined in each individual case by cooperation between patient and physician.

The patient may read or play quiet table games. A stage of comfortable fatigue may be conducive to proper relaxation, rest and sleep. But overdoing this fatigue may so tax the patient's strength that his recuperative ability may not be sufficient to bring him back to normal. All exercise should be carefully prescribed by the physician, who should through periodic examinations, supervise the patient's activity.

Nutrition is very important in the case of children with cardiac disease. In examinations of school children, it has been found that a much higher percentage of those classified as undernourished have heart disease than of children who are properly nourished. The heart of a growing child increases in size proportionately with its body. Nutritional conditions which interfere with the proper growth and development of the body exercise a harmful influence upon the heart itself. Therefore, no treatment of heart affections in children will be completely successful without careful supervision of their diets.

Meals should include at least one warm dish. Cold meats should be avoided. The child should not be urged to eat or be given food when overtired. Since small meals often are more easily digested and tax the heart action less than larger ones, four or five small meals may be preferable to three larger one. Meals should be regular but the best interval between meals will have to be determined by experiment.

The removal of foci of infection is also included in the successful treatment of heart disease, such as decayed teeth and other septic mouth conditions, and the removal of adenoids and diseased tonsils. Infections, colds, and sore throats may affect the diseased heart seriously and should receive the most careful attention. At the first sign of a cold, as at the first signs of shortness of breath, listlessness or fatigue, the child should be put to bed and the physician called.

Pains in the muscles and joints are also significant. The physician should be consulted even when the pain is slight and of short duration.

Proper and regular elimination of waste products of the body is extremely important.

Checking of weight should be by periodic weighing and any loss of weight reported to the physician.

Under no circumstances should medicine be given to the child with a diseased heart, except upon the advice of a physician.

Possible and potential cardiac cases must be considered as active cases and given repeated examinations by the physicians for proper classification, exercise and rest.

PREVENTION

Since many cardiac deaths are caused by heart disease contracted in childhood, the need for prevention in early years is clear. Emphasis should be placed upon the prevention of rheumatic fever, a disease which is probably preventable to a degree, though how great a degree is not known.

The principle of prevention of actual heart disease is careful observation of the potential cardiacs, the children who have had acute rheumatic fever, chorea, growing pains,

carditis, but have not yet developed permanent organic lesions.

In the second group, those children who already have well developed cardiac lesions, prevention involves keeping the general condition of the children as good as possible in order to prolong life or to prevent further involvement of the heart or further attacks of rheumatic fever.

In the third group, children who present abnormal signs and symptoms which cannot be definitely ascribed to organic heart disease, definite diagnosis is only determined after prolonged study and observation.

The medical principles underlying the prevention of heart disease in children are: avoidance of infectious diseases, and convalescent care sufficiently prolonged to allow full restoration of functions and perfect healing of the pathological process before an ordinarily active life is resumed.

These principles should be understood and put into practice by all individual physicians and nurses in private practice, in homes or institutions, as well as by all organizations, health and social agencies, official and unofficial. Education for prevention of infectious disease and for proper convalescent care is really the only preventive measure known against heart disease.³²

An understanding of the underlying causes is of primary importance to the institution of measures to prevent the occurrence of heart disease and to prolong the lives of those who have developed it.

The health habits of all children must be carefully supervised to maintain nutrition, secure adequate rest and sleep, limit activity, when necessary, and to avoid infection.

The very marked association of rheumatism with heart disease clearly indicates the importance of prevention and proper treatment of rheumatic affections. Children with dental decay, or who are subject to repeated attacks of tonsillitis, most frequently are subject to rheumatic attacks. Special care must be given, therefore, to the removal of the so-called portals of entry, such as adenoids, diseased tonsils and decayed teeth.

Moreover, since chorea and so-called growing pains of children are most probably manifestations of rheumatic infection, children presenting these symptoms should be placed under constant medical supervision and subjected to repeated examinations in order to minimize any potential damage to the heart.

The New York State Medical Society³³ makes the following summary:

From the social point of view, heart disease is probably influenced by economic conditions, just as tuberculosis undoubtedly is. Both diseases require a public health nurse and social worker in a preventive campaign; both handicap without necessarily destroying efficiency; in both the usual methods of quarantine are useless, and the control of the carrier through hospitalization and education is important. The methods developed in the prevention propaganda for tuberculosis are applicable to heart disease. It is only in what has already been accomplished in the way of education, equipment and facilities that heart disease is in striking contrast to tuberculosis, being as inadequately provided for as tuberculosis is fully provided for. The type of equipment necessary, however, is similar, and tuberculosis clinical and sanatoria equipment are easily applicable to heart disease.

Summary of Present Conditions

The rapid rise of death rate indicates that the heart situation is important. It is estimated that approximately 2 per cent of the total population is suffering from heart disease.

Heart disease is a serious handicap to the worker, impairing his efficiency and incapacitating him for long periods of time.

Heart disease has a higher incidence among Negroes than among whites.

New York State, as a whole, has a higher incidence of heart cripples than other states. The commuter sections of the state have low rates, both in comparison to the rest of the state and to similar sections in other parts of the United States. This may be due to economic conditions.

Valvular disease, and especially mitral insufficiency, prob-

ably due to rheumatic heart disease, are the most frequent forms of heart defect.

The similarity in the requirements for an attack upon heart disease and that upon tuberculosis inspires the hope that an extensive, vigorous health campaign may eliminate at least some of the preventable deaths from heart disease and prolong the life of many other persons with heart defects.

The provision of adequate school health supervision in a community, and the regular medical examination of the children are important factors in the control of heart disease in children. The discovery of children who have had heart disease, who have heart disease, or who are potential cases, should be followed by application of proper relief measures and the necessary systematic supervision, appropriate exercise, proper diet and environment.

From the community standpoint the school nurse and her follow-up work in the home is of great value in safeguarding the lives of cardiac children. The duties of the nurse in the home are: To emphasize the importance of school examinations and reexaminations for proper classification of the child's condition from time to time, so that the proper remedial measures may be applied; to inform parents of the abnormal conditions and the necessity for rest in bed when prescribed, the kind of diet needed, the amount of exercise that should be permitted, and the freedom from emotional excitement that is demanded and to emphasize the fact that every child with a cardiac condition, however mild, should be considered an active case and a candidate for periodic reexaminations.

Little, if anything, can be done as to prevention, or for the heart itself, in the group suffering from congenital malformations. These cases, however, need as much care as a patient with acquired heart disease.

In childhood, functional disorders of the heart do not hold the important place that they do among adults, but they do occur and, when present, must be recognized and treated.

What Is Being Done for Cardiac Children?

Many services are available for cardiac children; for example:

The private physician may be consulted at the initiation and expense of those parents who can afford his services for their children.

The hospital, where it exists, furnishes facilities for service for both free and pay cases, including clinics for the ambulatory cases who are able to live at home and visit the clinic for examination and advice.

In the health center heart cases are discovered incidentally in making the periodic health examination, such cases being referred to the private physician, the hospital or clinic for care.

Public and many private schools furnish medical service, and, while in some cases the quantity of such service is superior to the quality in so far as careful examinations of the heart are concerned, more careful studies will probably be made as appreciation of the need for this service and the willingness of the people to pay for it through taxation make it possible.

Industry, appreciating the fact that the individual is only as good as his physical status, no matter what his ability or skill, finds it economical to furnish medical supervision service to its employees and often to their families.

Insurance companies have found it profitable to give medical and nursing service to the ill who are insured in their companies. The periodic examination offered by many of the larger companies is also considered profitable.

Fraternal organizations, particularly those with insurance features, are making physical qualification based on a physical examination a requisite for entering the association.

Employment. At the present time, there is a distinct

effort to impress employers with the necessity for regarding the residual assets rather than the liabilities of the physically handicapped persons, and to show them that in properly selected positions, industrial or commercial, handicapped persons have done as good work as the non-handicapped. In 1918, the problem of employment of cardiac patients was brought before the Hospital Social Service Association as part of the general program for employment of all types of physically handicapped children. An employment bureau for the handicapped was established in April, 1918, at the office of the Hospital Social Service Association, where it still carries on its work.

Hospitals. Very few hospital records indicate the number of bed-days devoted to cardiacs. The cost of their care can only be approximated. Even the percentage of pay patients is unknown. In hospitals heart cases are often taken to the wards, and in the case of children eventually to the convalescent homes where possible, especially in the larger cities.

Schools. In schools special provision is made whereby the study periods are shortened and the rest periods are lengthened and made more frequent. Advanced cardiacs are often dismissed earlier than the other pupils in order that they may not be subjected to the excitement and strain incident to the dismissal and taking in of school.

Attention to the nutrition and avoidance of infection are also important.

Since the dearth of medical practitioners in rural districts is increasing, probably centers for diagnosis, at least in the form of health centers under the county health department or under a private association of physicians, will be established eventually.

INTESTINAL PARASITES: HOOKWORM AND ASCARIASIS

HOOKWORM and ascariasis, essentially rural problems associated with ignorance and isolation, are confined to cer-

tain areas in which the character of the soil and the primitive habits of the people make the conditions favorable to widespread infestation with these parasites.

W. G. Smillie,⁴⁹ senior State Director of the International Health Board, has commented on the tragic irony of the soil situation of this country. While in New England, as he says, "the granite-ledged, shallow soil yields a parsimonious existence through dint of strictest economy . . . the light, moist, warm, easily cultivated sandy soil on the coastal plain of the South has treacherously enslaved or slain its children while it pretended to nourish them."

HOOKWORM

The parasite hookworm which thrives particularly in sandy soil enters the bodies of human beings in the larval form.² It penetrates the skin of the bare foot, is transferred by the blood stream to the heart and lungs, reaches the stomach through the gullet and thence travels to the intestine, where the larva changes to the adult form, takes up its permanent abode and lays eggs.

A relatively small number of worms—say, fewer than one hundred, is comparatively harmless to a healthy person. In larger numbers, however, hookworms produce anemia and low vitality. The patient suffers from headaches, is breathless after exertion, and is thin and bony, the heavily infested groups averaging fifteen pounds underweight and showing a definite retardation in growth due to severe hookworm infestation.

In an infestation of 500 worms or over, the clinical picture of a case of hookworm infestation shows an individual undernourished, undersized, listless and apathetic, with severe anemia, dry skin and scanty hair, edema of face and legs, shortness of breath and weakness.

Nutrition plays a part. In an Alabama study Smillie⁴⁹ found that children who drank several liters of milk a day had normal hemoglobin, despite an average infestation of

400 hookworms each. Their companions, who had a similar intensity infestation but drank no milk, showed a definite lowering of hemoglobin.

Hookworm is essentially a children's disease, and since its prevalence gradually increases as the age rises, reaching its peak during the fourteenth year, children are most liable to have their vitality depleted by hookworm during the years when they most need it.

Prevalence

Hookworm is found in all countries of the tropics and subtropics which have abundant rainfall. Facts on the incidence of hookworm have been gathered in three states, Alabama, Georgia and Tennessee. In the year 1925, the International Health Board made a study of this problem in Alabama. Since this state is typical of the entire group of south coastal states as to climate, economic and geologic formation, and type and distribution of the population, the information acquired concerning the problem in this state applies to the entire group. (Tables 9, and 10.)

Hookworm infestation is one of the major public health problems of Alabama, the incidence among children of school age ranging from less than 5 per cent in some of the larger towns to 95 per cent in the heavily infested rural communities. The children of school age represent the most heavily infested group.

TABLE 9

INTENSITY OF INFESTATION OF 664 RURAL AND URBAN WHITE CHILDREN
IN COVINGTON COUNTY, SOUTH ALABAMA. SIX TO SIXTEEN YEARS

Group	Description	Percentage of children in each group	
		Rural ^a 444 <i>Per cent</i>	Urban ^a 220 <i>Per cent</i>
1	Negative (no hookworms).....	3.6	55.9
2	Very light infestation (1-25).....	15.3	15.0
3	Light infestation (26-100).....	24.5	22.0
4	Moderate infestation (101-500).....	42.5	5.9
5	Heavy infestation (501-1,000).....	7.8	1.0
6	Very heavy infestation (1,001-3,000).....	6.3	0.0

^a Urban children include all that live in even small villages—250 or more; rural children those who live on scattered farms.

TABLE 10

INTENSITY OF HOOKWORM INFESTATION IN NEGRO CHILDREN
OF COVINGTON COUNTY, SOUTH ALABAMA. SIX TO SIXTEEN YEARS

Group	Description	Percentage of children in each group	
		Rural 117 <i>Per cent</i>	Urban 97 <i>Per cent</i>
1	No hookworms.....	39.0	45.2
2	Very light infestation (1-25).....	30.9	28.3
3	Light infestation (26-100).....	20.6	18.9
4	Moderate infestation (101-500).....	8.0	3.2
5	Heavy infestation (501-1,000).....	0.9	2.0
6	Very heavy infestation (1,001-3000).....	0.0	1.0

Village and town children have much lower intensity of infestation than children living on farms. Light infestation in rural children under school age is common, but heavy infestation in little children is rare.

There is little or no difference in intensity of infestation in boys and girls in Alabama.

For some reasons, as yet unknown, hookworm infestation among Negroes is comparatively slight. There is no explanation of the marked difference in the intensity of hookworm infestation in white and Negro races in Alabama. When the two races are living under almost identical conditions of sanitation, economic status, occupation, soil, temperature, the whites may have a heavy infestation, whereas the Negroes have a very slight infestation. (Table 11.)

TABLE 11

DIFFERENCE OF HOOKWORM INTENSITY IN FARM AND VILLAGE CHILDREN
IN ALABAMA AS A WHOLE. 1,284 WHITE CHILDREN AND
555 NEGRO CHILDREN

Group	Description	White		Colored	
		Rural <i>Per cent</i>	Urban <i>Per cent</i>	Rural <i>Per cent</i>	Urban <i>Per cent</i>
1	No hookworms.....	37.1	63.8	76.1	64.8
2	Very light infestation (1-25).....	12.6	11.9	13.8	19.1
3	Light infestation (26-100).....	16.7	17.7	6.1	10.4
4	Moderate infestation (101-500)....	26.0	5.1	3.0	4.3
5	Heavy infestation (501-1,000).....	4.1	1.0	0.3	1.2
6	Very heavy infestation (1,001-3,000)	3.3	0.7	0.3	0.0

The remarkable universal decrease of hookworm intensity in Alabama children at about fourteen years is due to the custom of beginning the constant use of shoes at this age. No new infestation is acquired and the old parasites gradually die out in from three to five years. This single factor of wearing shoes may be the determining factor between severe and simple light infestations.

Studies made in 8 counties of Georgia showed that from 17.5 to 75 per cent of the children had hookworm. A conservative estimate places the number of cases of infection in that state at about twenty-five thousand. In Tennessee, where the six to sixteen-year old group was studied, the high incidence of the disease was shown to be confined to the Cumberland Plateau, an area comprising only about 10 per cent of the state, and the Unaca Mountain Range, an even smaller area.

Conclusions on Prevalence

According to Smillie ⁴⁹ in *American Journal of Diseases of Children*:

1. Heavy hookworm infestation (500 *Necator Americanus* or over) causes marked retardation in the normal growth in height and weight and lowers the hemoglobin of children of school age. An intensity of from 100 to 500 worms also produces measurable injury.

2. Light infestations (from 1-100 *Necator Americanus*) produce no measurable retardation in the normal development of children of school age, nor is the hemoglobin of this group reduced to a measurable degree.

3. An infestation of 25 *Necator Americanus* may be considered as the economic base line curve. An infestation of 25 or less represents a carrier state and is not true hookworm disease.

4. Sanitation and education should be relied on to control the hookworm carrier. Hookworm treatment should be used only in cases of true hookworm disease.

5. The Stoll ova count method is a reliable measure of the intensity of hookworm infestation.

6. The conclusions apply only in areas in which *Necator Americanus* is the principal infesting agent. Malnutrition, a poor dietary, overwork, intercurrent malaria, and other diseases were important factors which affected the hemoglobin of many of the patients infested with hookworm.

ASCARIASIS ²

The ascaris worm, *ascaris lumbricoides*, another of the parasites found in the soil of the South, is taken into the system in the form of eggs through the mouth via soiled fingers or in food or water. The eggs pass to the intestine, where they hatch, enter the blood stream and are carried to the lungs. The parasites return to the intestine, where they reach sexual maturity in about six weeks.⁵⁰ The chief injury from this disease comes from hemorrhages of the lungs. There is a great need of knowledge regarding the relation of ascaris to lung diseases, also as to its effect on the general health of the population groups where it occurs.

Prevalence

In the northern part of this country only isolated cases of ascariasis have been found. On the whole, information as to its prevalence is very limited, but we do know that the worst and only endemic areas so far studied are the mountainous regions of the southeastern United States. The only comparative study of the incidence of ascariasis by states was one made by the Rockefeller Sanitary Commission in 1914 and 1915, and the one now in progress under the direction of W. W. Cort of the Johns Hopkins School of Hygiene in cooperation with the Health Departments of Tennessee and Alabama.⁵⁰

A study of *ascaris lumbricoides* and other human intestinal worms made in the summer of 1928 in Wise County, Virginia, located in the mountainous section of the southwestern part of the state, revealed the following facts:

The incidence of ascariasis in the series examined was

almost 60 per cent in the children and 30 per cent in adults.

The worm burden of children was several times that of adults.

Almost all the really severe cases were found in children under twelve years of age.

Females of childbearing age were more heavily infested than males.

The infestation in the rural series was slightly heavier both in adults and children than that in the communities series.

Both in the rural areas and in community groups studied, the family was the unit of ascaris dissemination, and certain families carried extremely heavy worm burdens.

Only a few sources of infection were found affecting several families or community groups.

There was no evidence that the water supply was responsible for ascaris infestation.

In most of the families studied, even in the most heavily infested, privies were present and in use especially by adults.

Even where privies were present, gross soil pollution, usually attributable to the youngest children, was usually found in yards of families with ascaris infestation.

Such pollution seeded the dooryards, the soil along the sides of the houses, and, in many cases, areas under the houses, with enormous numbers of ascaris eggs.

The introduction of privies had not brought ascaris under control because they were not used by younger children.

Several cases built up in families with no pollution on their premises were traced to visits of children to polluted areas in other yards.

Several groups of Negroes, one extremely poor, and numbers of very poor white families, showed little or no ascaris infestation because of the control of the children and the use of privies by all members of the families.

Some of the better off rural families with well kept yards and good privies, and certain families in well sanitated mining camps were heavily infested. These infestations were almost always due to soil pollution of nearby houses by the young children who were not taught to use sanitary facilities provided.

The soil in unshaded yards covered with cinders proved to be unfavorable for the development of ascaris eggs and kept down the infestation in certain places where soil pollution was bad. With this exception, general environmental conditions, amount of vegetation, or character of soil had no influence on ascaris infestation.

Of 11 southern states (Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia) Kentucky led in incidence with 22 per cent positive, Virginia came second, with 14 per cent, and Tennessee third, with 5 per cent.

There are certain factors affecting the spread of ascariasis about which we are still completely ignorant. Unquestionably, as with hookworm, the factor of sanitation is all important, yet we find both high and low degrees of incidence in counties of equal sanitary conditions.

TABLE 12

INCIDENCE OF ASCARIASIS IN TOTAL SERIES OF EGG COUNTS
FROM SOUTHWESTERN VIRGINIA

Age group	MALES		FEMALES	
	Cases <i>Number</i>	Positive <i>Per cent</i>	Cases <i>Number</i>	Positive <i>Per cent</i>
0- 2 years.....	78	37.2	78	32.1
3- 6 years.....	247	63.3	245	58.4
7-14 years.....	448	56	477	58.5
15+.....	246	26.8	333	27.6
<i>Total</i>	1,019	49.3	1,133	47.6

A more accurate figure is obtained when a correction is made according to a standard population giving an incidence of 38.6 per cent for males and 37.9 per cent for females.

TABLE 13

AVERAGE EGG COUNTS FOR ASCARIS INFESTATION IN SOUTHWESTERN VIRGINIA. SERIES ANALYZED ACCORDING TO AGE AND SEX

Age group	MALES			
	Number of cases	Average egg count per cc.	Number of positive cases	Average egg count per cc. of positive cases
0- 2 years.....	78	5,780	29	15,540
3- 6 years.....	247	19,360	156	30,650
7-14 years.....	448	11,260	251	20,090
15-39 years.....	182	1,680	54	5,670
40+.....	64	2,070	12	11,060
0-14 years.....	773	13,290	436	23,570
15+.....	246	1,780	66	6,650

Age group	FEMALES			
	Number of cases	Average egg count per cc.	Number of positive cases	Average egg count per cc. of positive cases
0- 2 years.....	78	2,960	25	9,240
3- 6 years.....	245	18,870	143	32,340
7-14 years.....	477	13,570	279	23,190
15-39 years.....	264	3,130	78	10,610
40+.....	69	1,640	14	8,110
0-14 years.....	800	14,160	447	25,340
15+.....	333	2,830	92	10,230

PROTECTION AGAINST INTESTINAL PARASITES

The medical principles underlying protection of persons infected with hookworm and ascariasis are: early detection, early medical care in order to rid patients of infestation and to relieve the resultant anemia.

Present Social and Medical Provision. In those areas where the parasites abound, public health departments have established protective measures through extensive and intensive control of human excreta by construction of sanitary privies and education of the populace in the proper use of privies.³

PREVENTION AGAINST INTESTINAL PARASITES

Medical Principles. Since the organisms causing these two parasitic diseases of the intestines are present in the soil, are deposited with excreta from infected humans, and their methods of entering the body are known, the preventive measures include *sanitation* and *personal hygiene*.

Sanitation consists of sanitary privies properly constructed and used and the disinfecting of soil known to be infected. In hookworm *personal hygiene* includes covering the parts of the body exposed to soil infected with hookworm; in ascariasis, general cleanliness, especially of the hands, since the organism causing ascariasis is transmitted by mouth.

Present Social and Medical Provisions. The problem of prevention of hookworm and ascariasis is one of sanitary control and education in sanitation and personal hygiene. Both of these are the important duties of departments of health. All health and social agencies are responsible for education of the general public in infected areas as to causes and methods of control of these diseases.

The specific methods for prevention and care of intestinal parasites (*uncinaria* and *ascaris*) must be decided by local conditions, but the medical principles here outlined should be recognized, approved and adopted everywhere in the work if it is to succeed.

In the case of both hookworm and ascariasis, one of the major problems is sanitation. Ever since the years 1914 and 1915, when, largely through studies of the Rockefeller Sanitary Commission, the South was roused to a realization of the extent and seriousness of these parasitic diseases, it has been warring against them. Before the children of the southern states will be rid of these diseases, outhouses must rise behind all of those shacks in the rural areas. What is more, they must be used. State health departments have developed departments of sanitary engineering, and all cities and small towns have sewerage and water systems, while two states,

North Carolina and Alabama, have laws on this subject. County health departments have been created, traveling clinics are going out into the rural areas, bringing medicine, doctors, and perhaps equally important, conducting educational campaigns. Teachers and doctors are in increasing numbers recognizing these diseases and securing treatment.

Reports indicate that there are vast rural areas including counties or groups of counties in which one-fifth or less of the families have toilets that the state departments of health would class as sanitary. A great many homes among the tenant class, of both whites and Negroes, have not yet provided themselves with any kind of toilet.

Of course, in the case of clinics, except in the counties where there are full time health departments, there is usually no one to assume leadership in arranging for clinics. Even where health departments have been established, budgets in many instances are small, so that the personnel has to cover large areas and serve many people. This means that the health service is thin.

Although details are not yet available, in general there is evidence that in Tennessee there has been a great reduction in the incidence and intensity of hookworm, also that this disease is becoming less and less of a rural problem in Virginia. Authorities state that perhaps the outstanding improvement in the control of hookworm has been made in North Carolina, where it may almost be said that the disease is under control. On the other hand, available information indicates that hookworm is still an important problem along the Gulf of Mexico.

This is illustrated by the findings in southern Alabama, and apparently the disease is still far from being under control in Florida.

But while "enormous strides have been made, it will take two generations more at least before it can be ignored. The disease is by no means eradicated from this country."

Improving sanitary conditions has been effective in reducing hookworm and ascariasis, but education and training are equally necessary, because while adults have availed

themselves of outhouses, the children, because of ignorance, carelessness, or unadaptability, do not so generally make use of them. Consequently, the ascaris eggs, which survive in the hard soil about the houses, where the children play, continue to infect the children, even after the hookworms are eradicated. Another reason why hookworm disease is easier to eradicate than ascariasis is that it can be successfully treated, while ascariasis cannot.

A plan for hookworm control in the southern United States is outlined by Smillie⁴⁹ in the *American Journal of Diseases of Children* as follows:

1. Control of carrier. (a) By methodical and systematic education of the people with regard to mode of hookworm infestation. (b) By pushing vigorously the installation of sanitary toilets throughout the rural areas of the southern states.

2. Limit treatment to actual cases of hookworm disease in rural white school children. (a) By making an ova count estimation of intensity of infestation of rural white children as a routine part of the regular annual examination of school children. All persons with light infestations may be advised that they are carriers but do not need treatment. (b) By administering hookworm treatment only to those with moderate or heavy infestations. One standard treatment may be administered to children in Group 4, two treatments to those in Groups 5 and 6. (For groups see Tables 9, 10, 11.)

If such a plan were followed, hookworm disease as a real menace to the people of the southern states could readily be kept under control by the public health organization already existing in the various states, as a part of the routine procedure in the medical examination and correction of school children.

This method or any other treatment will not reduce the incidence of infestation for any considerable period of time. Hookworms will not disappear from the southern states until the habits and sanitary customs of rural people are completely changed. Hookworm incidence will diminish slowly year by year as the general principles of sanitation radiate

from the towns and villiages to remote rural districts. But only with the improvement of economic conditions in rural sections of the South, and betterment in educational advantages for rural children, will it be possible to win complete control over hookworm infestation in the United States.

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PROBLEMS OF MENTAL HEALTH

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This report is based upon questionnaires sent out to all members of the Subcommittee on Mental Health by its chairman, Doctor Lawson G. Lowrey; upon special studies of the incidence of mental disturbances by Doctor Benjamin Malzberg, and upon excerpts selected from the literature and summarized by Miss Clare W. Butler. All this material was analyzed by Howard Becker of Smith College, Northampton, Massachusetts, who wrote the summary report and the first draft of the full preliminary report, both of which were then revised by the editorial Subcommittee headed by Doctor Lowrey, Doctor William J. Ellis, *Chairman*, and Emil Frankel, *Research Secretary*, of the Section on the Physically and Mentally Handicapped.

PROBLEMS OF MENTAL HEALTH

THE MEANING OF MENTAL HEALTH

HEALTH as a general concept denotes positive as well as negative conditions. Just as physical health implies more than the absence of recognizable symptoms of disease, mental health signifies far more than mere freedom from mental illness.

Many definitions of mental health, however, take account only of its negative aspects, describing the healthy mind as one which presents none of the definite symptoms ordinarily associated with one of the recognized mental disorders—psychoses, neuroses, epilepsy, or psychopathic personality. From the broader point of view such negative definitions are obviously inadequate.

In the comprehensive meaning mental health may best be defined as that adjustment of human beings to themselves and to the world at large which results in a maximum of personal and social effectiveness and satisfactions. The highest degree of positive mental health permits an individual to realize the greatest success which his capabilities will permit, together with the maximum of satisfaction to himself and the social order, and a minimum of friction and tension. This means that mental health is not merely the absence of ill health nor mere efficiency and contentment; neither is it solely the cheerful acceptance of the rules of the game. Mental health implies a degree of well-being in which the person is not preoccupied with unsatisfied tensions, does not manifest gross forms of socially inadequate or objectionable behavior, and maintains himself intellectually and emotionally in all environments and situations that do not bring about crises too intense or too frequent to be beyond the

adjustive power of human beings and that are neither so rigid nor so over-authoritative that personality is inevitably warped.

The use of the words *success*, *satisfaction*, *adjustment*, *social order*, and *objectionable* in the definition should not be interpreted as identifying mental health with passive conformity. Even with a considerable degree of maladjustment a person may be socially viable and socially useful. Variates sometimes introduce valuable innovations. Moreover, successful adaptation to life implies a successful and well adapted social order. Nothing can be more fallacious than the interpretation of mental health in strictly individualistic terms. Positive mental health is but the personal aspect of a society in which personal and social values are in right relation to each other and are attainable by everyone within the limits of his biological capacities.

ABSOLUTE AND RELATIVE MENTAL HEALTH

Although such a definition points to a stage of perfection that is never actually reached by anyone, nothing short of this positive definition of mental health does justice to all the implications of the term. A completely healthy, entirely normal physical organism made up of absolutely healthy parts is probably non-existent. In the same way those gifted with the best of mental health present more or less discernible flaws, commonly called *peculiarities* or *difficult spots*.

Evidently the most that can be said of any person is that he has better mental health than others. There is no sharp line irrevocably dividing those who are mentally ill from those who are mentally healthy. The two conditions shade into each other by minute gradations, and the precise point at which mental health passes over into its opposite, mental ill health, depends on social judgments that vary with time and place. Everyone presents trends which, if developed to an extreme degree, would cause the label *insane* to be applied to them. Measures that will improve the adjustment of that great number of persons who under present circumstances

are called mentally healthy as well as of those definitely ill of mental diseases, manifestly will produce results beneficial to every member of society. We cannot be content with the theoretical limitation of our task to a few insane, mysteriously set apart from their fellows. Positive programs for furthering mental health are greatly needed.

GOALS OF MENTAL HEALTH EFFORTS

Ultimate

Positive programs of mental health must necessarily aim at the development of the best possible type of personality. This can be accomplished, in part, by methods designed to develop desirable attitudes in the person himself, or by methods aiming at the creation of the best possible social relationships and environmental situations.

At the present time, these two branches of positive endeavor are largely in the hands of the family, the school, the church, the various administrative agencies set up by local, state and national governments, and bureaus and agencies for social amelioration and reform, and probably should remain under their general direction. The task of positive mental hygiene is so to imbue such institutions with the conviction that mental health is one of the chief ends of human endeavor, that each institution will judge its activities from the mental health standpoint as well as in terms of stability and immediate efficiency. When they finally reach the stage of regarding the conservation and furtherance of mental health as one of their principal *raisons d'être*, mental hygiene *as an organized movement* probably should play little part in the activities of the institutions named. Until that time comes, however, it will perhaps be necessary to create and maintain special organizations for the specific purpose of furthering positive mental health.

Proximate

In spite of the desirability of promoting positive mental health, the present state of public opinion, the scanty financial

and personnel facilities available, and the presence of vast and pressing problems due to mental ill health make it necessary to develop programs primarily designed along negative lines. In other words, any program that is immediately practical must emphasize the alleviation and prevention of recognizable mental ill health. Indeed, some students of the problem even claim that the measures most urgently required are those dealing with definite mental diseases. In any case, only when the grosser ills have been successfully combated can major effort be transferred to the attainment of the ultimate goal of mental hygiene—the creation of the best possible type of personality. But though major effort must now be devoted to the attainment of the proximate goal of alleviation and prevention, it is highly desirable to give as much attention as possible to the positive aspects, if only with a view to influencing public opinion. For the present and for the foreseeable future, however, the proximate goal must be alleviation and prevention. Public opinion has a way of being swayed chiefly by tangible, statistically measurable results; and it is highly probable that the most rapid progress toward the ultimate goal will be made by concentration upon the problems of mental ill health.

Further Concentration of Effort

In addition to concentrating on the problems of mental ill health, it seems advisable to emphasize early recognition and treatment, commonly called *prevention*. Although almost half a million inhabitants of the United States are now undergoing treatment for the graver mental disorders, this number is a relatively small percentage of the total population, and is almost insignificant when compared with that vastly larger number whose mental difficulties are evidenced by minor twists and distortions of personality.

The general public understands *mental ill health* or *mental disorder* to mean only one thing, that is, so-called *insanity*, and efforts designed to ameliorate and prevent mental ill health are at present greatly handicapped by the

facile, widespread assumption that only cases that have progressed far enough to be labelled *insanity* can or should be dealt with. As a matter of fact, the term *insanity* is rapidly falling into disfavor among those who are abreast of latest developments, and has been relegated largely to the law, where it is used primarily for forensic purposes, notably in arguments purporting to establish responsibility or irresponsibility.

In addition to insanity, mental ill health includes a variety of borderline states, particularly certain cases of delinquency, prostitution, vagrancy, and dependency, that misunderstanding and tradition insist on labeling from rigidly moral or legal points of view. Mental ill health also includes a group of conditions known technically as the *psychoneuroses*, the milder forms of which are popularly known as *nervousness* or *nervous breakdown*. Those afflicted with these recognizable symptoms of mental ill health, and their friends and relatives as well, often indignantly repudiate the suggestion that mental factors had any part in their genesis, but, although their causative factors and prognosis are seldom similar, to the psychiatrist ordinary nervousness is quite as much an indication of mental ill health as is definite insanity. Individuals with no discoverable physical disease who seek to translate their mental or nervous difficulties and conflicts into terms of physical ill health form an especially well marked group in the class of the mentally ill. Hypochondria is always with us. The fact that the complaints of the hypochondriac are generally expressed in terms of physical ill health should not mislead those seeking to aid these individuals, nor, on the other hand, should their complaints be dismissed as mere imagination. Often a chief underlying factor is a life situation which the patient, as the result of hereditary or acquired inadequacy, cannot satisfactorily meet without compensatory or protective symptoms. It is not fair, however, to imply that all nervousness is compensatory or protective in origin, for certain very definite physical diseases leave a well marked nervous aftermath which disappears when full recovery is attained. Nevertheless, a great

deal of modern nervousness is definitely the outgrowth of disturbing situational factors which the individual is not biologically equipped to meet or which no biological equipment would enable him to meet. Minor though they frequently are, these and similar evidences of mental ill health have social correlates that cannot be ignored.

THE SOCIAL IMPORTANCE OF PREVENTION

The early detection and treatment of these lesser mental maladjustments would strike at the very root of many of our most pressing social problems. Suicide, prostitution, delinquency and crime, dependency, industrial maladjustment, divorce, and countless other personal social difficulties have mental health implications. The statement that "one out of two cases of social trouble is a psychiatric one," attributed to Southard, was but yesterday considered the radical utterance of an enthusiast. In the light of accumulated evidence, it is today almost a commonplace to say that even efforts limited to the proximate goal of early detection and treatment of mental ill health have something to contribute toward the solution of every human problem.

MENTAL HEALTH IN THE CHILD AND THE ADULT

The problems of mental health include those of childhood as well as those of adult life, for when once the idea of the relative nature of mental health is firmly grasped, theoretic distinctions between mental health in the child and the adult disappear. Many children manifest behavior that at a later age would be called pathologic, but at this particular stage of development such behavior is often nothing more than part of the process by which adult mental health is ultimately achieved. In other words, mental health is a continuously shifting equilibrium, rather than a static, rigidly organized condition, and is fundamentally the same at all ages, although the behavior necessary to maintain such equilibrium may be markedly different in the differing situations confronting the child on the one hand and the adult on

the other. Hence whatever differences exist are simply differences in the plasticity and environment of the child and the adult, and are of degree rather than kind.

It follows, then, that the only differences between measures for furthering mental health of the child and those for the adult should be in the particular practices involved, and not in the theoretic principles. The child requires much more leeway than the adult for experimentation with acts, thoughts, emotions, and forms of social adaptation in order that he may build up habits, motives to conduct, and appreciation of social values which will stabilize him in future adjustments. Children are in a formative state with a rapidly changing base, so to speak. The ultimate goal of action is similar to that of the adult, and the theoretic principles underlying practices are the same, but the practices must be different for the child both in reference to adult behavior and to later stages in the particular child's development.

The Relation of Organic and Functional Disorders

Mental disorders due to birth and later injuries, infectious diseases such as epidemic encephalitis, and other types of inflammatory and destructive processes in the neurologic structure are responsible for some of the most stubborn types of mental disorder, and should be given due weight in any discussion of causes.

To most laymen and indeed to most physicians, mental disorders are commonly ascribed to faulty biologic inheritance, and as a consequence the belief that nothing can be accomplished by early detection and treatment is widely held. But existing data on hereditary transmission of mental disorders must be viewed with extreme caution; much of the evidence adduced simply shows that mental ill health is frequently found in certain family histories and does not prove any causal biologic relationship. It is frequently difficult to prove that a given case of mental illness in a living person is due primarily to biologic rather than situational defects. It is much more difficult to pronounce unreservedly

on the frequently scanty evidence adduced in family histories fifty or one hundred years old. Most modern psychiatrists express themselves with extreme caution on such matters, believing that at least some of the defects of personality formerly ascribed to heredity are predominantly if not wholly acquired. Except, if and when, evidence on hereditary transmission is produced with sufficient control of situational factors they are more and more inclined to ascribe to situational influences operating in the early lives of individuals a great many cases of mental ill health which a decade or two ago would have been dismissed as "in the family."

Adverse situational factors may often be unearthed by a careful study of the immediate family history of the person in question. Such a study may proceed either indirectly or directly, that is, by means of data gathered from extra personal sources or by a thorough study of the individual. Probably the most fruitful procedure is a combination of both methods. In this way it may be possible to bring to light disturbing factors forgotten or otherwise obscured which could not be reached without an extremely long period of intensive personal investigation. The mental disorders (certain psychoses—various neuroses) resulting from or at least occasioned by such adverse situational factors are usually called functional; that is to say, although future refinements of neurologic technique may possibly lead to the discovery of predisposing organic conditions for which disturbing situations serve as releases or precipitating factors, present techniques have not revealed any assignable organic bases for the resulting mental disorders, and these therefore must be called functional maladjustments rather than definite organic breaks or lesions. Although the controversy of organic versus functional has not yet been decided, the concept of functional disorder has been and probably will continue to be a useful heuristic principle.

The use of this concept should not, however, lead to the unfounded assumption that there is some peculiar and distinct entity called *mind* completely unrelated to bodily states. The idea that psychiatry deals with mind disease must be

combated, for there is no theory of the sharp separation of the organism into mind and body which has any scientific reason for existing. Further, mind is a function of the entire human organism and not merely of the mass of nervous tissue called the brain. It has its roots in the autonomic nervous system, the endocrine glands, the viscera, and even in the kinesthetic sensations of the muscles and joints. Exaltation or depression is as much a matter of glandular secretion as of intellect, and emotions are in all probability more closely linked with various digestive, respiratory, excretory, and reproductive organs than they are with the cerebrum. There are innumerable instances of character change, personality alteration, mutations in attitudes and mental content that have well marked somatic correlates. Hence the term *mental ill health* is simply a convenient term which denotes that the striking symptoms in the case under observation are mainly changes of or quirks in personality; the possibility must always be left open that there may be important concomitant changes in the organs and tissues of some parts of the body even though at the moment they cannot be detected.

In thus making full allowance for the possibility that organic correlates of every kind of mental ill health may sometime be discovered, there is no intention of asserting that such organic correlates should now receive most attention in treatment. Psychiatrists have often been able to effect apparent cures of severe cases of mental ill health without any specific organic treatment. They have altered the attitudes of the sufferer by means of psychotherapy or have remedied the disturbing situation by means of social psychiatric therapy, and the symptoms have disappeared, never to return. Such pragmatically valid evidence cannot be brushed aside; no matter what advances in our knowledge may occur, there will always be a large place for non-organic alleviation and prevention of mental ill health.

At present so little is known of the organic bases (assuming them to exist) of many major mental disorders, as well as of minor defects in personality, that a very large place

must be granted to non-organic treatment. The acquired functional disorders account for the majority of cases of mental ill health occurring at practically all ages, and the fact that they have often been successfully dealt with by special non-organic measures opens up a wide range of possibilities for improving mental health.

Causes of Mental Ill Health

The cause of any given condition is the integration of all the factors operative. But since most persons are not content with such statements of functional interdependence, a rough classification of factors that have seemed of primary importance in particular cases is perhaps in order. There is no intention, however, of ascribing any given case of mental ill health exclusively to any one of the factors listed; careful clinical methods have time and again demonstrated just how fallacious such diagnoses are. The causes, listed in the order of their increasing functional importance, the predominantly organic first, are (1) physical, (2) psychic and (3) situational.

Physical. These comprise all types of somatic, physiologic, endocrinologic, and immunologic deviations in the individual which so limit his adjustive abilities that he cannot live in his social situation without developing symptoms of mental ill health. Such constitutional or organic bases of later disorders are rarely if ever causes in and of themselves. Only when taken in conjunction with the environments and situations into which the person is born do they play the part ascribed to them.

Organic deviations, however, are often extremely important. For example, limitations due to abnormally slow reaction time may have a marked effect on the competitive life of the person; he may find it virtually impossible to achieve social status sufficiently high to maintain an integrated personality. Children thus afflicted frequently adopt antisocial modes of behavior in order to gain prestige in the eyes of their companions, which their physical equipment

will not permit them to achieve through accepted competitive channels. Physiognomic deviations which from a morphologic point of view are quite minor may carry with them such esthetic handicaps in a particular social order that major personality difficulties ensue. For example, peculiarly formed ears or noses, eyes that do not conform to the modal pattern, slightly deformed limbs, may produce feelings of inferiority so great, in persons thus deviating from their fellows, that they may find it impossible to enter into normal social relationships, and this in turn may lead to mental ill health.

Endocrine malfunctioning may lead to irritability, excessive or diminutive size, adiposity, or emaciation, and these acting through the emotional attitudes may in turn have situational consequences which produce mental ill health. Up to the present, however, organic correlates for all forms of mental ill health have not been found, and the precise proportion due to defective germ plasm or hereditary transmission is by no means certain. Physical causes must therefore be discussed with extreme caution, and, where proper controls cannot be applied, should not lead to sweeping conclusions. Older classifications such as *congenitally vulnerable personality* and *constitutional irritability* must be regarded with considerable skepticism until more convincing evidence of biological determinism of social behavior is forthcoming. This is not to decry the organic point of view, but merely to point out the fact that a single cause of mental ill health is, to say the least, difficult to find.

Psychic. Psychogenic, mental, or psychic causes include all types of deviations and defects in personality development which are primarily due to the operation of emotional conflicts and complexes, largely determined by the reactions of the individual to environmental stresses and strains.

This does not mean that the psychic life of the person can be isolated from his physical endowment or that the psychic and the situational can be isolated from each other. Recent research in social psychiatry and social psychology rather clearly demonstrates that psychic and situational

factors are simply obverse and reverse sides of the same process. For present purposes psychic causes will be regarded simply as the end products of early conditioning persisting into later stages of development and consequently entering as constants into all the new situations encountered by the individual.

For example, the child whose parents have instilled into him morbid fears and attitudes carries within his personality factors which may cause him to succumb to mental ill health in situations which although adverse would affect a normally integrated personality much less seriously. Again, lack of sympathetic understanding, consideration, and frank information on the part of parents or teachers in matters relating to sexual adjustments may fixate attitudes of withdrawal, of its reverse exhibitionism, of undue curiosity leading to peeping Tom exploits, of exaggerated self-assertion or self-abnegation, that warp all social relations established later. Such deviations are probably the determining factors in what some writers still call *constitutional instability*, *constitutional seclusiveness*, and so on. In all probability these basic trends are at the very most potentially present in the organic endowment and would never become manifest in appreciable degree if it were not for early maladjustments that occasion their development into psychogenic factors of mental ill health.

Situational. This category includes extraordinary difficulties in the inorganic, organic, or social environments which occur more or less catastrophically at any stage of growth or after the elaboration of personality is advanced, that is, after college entrance, marriage, bereavement, and so forth. The distinction between psychic and situational causes is quite arbitrary and is extremely difficult to maintain in any specific case. One is the personal and the other the environmental aspect of the same underlying functional process. Situational stresses engendered by warfare may be instanced: from one point of view the shell shock and similar mental disorders so often manifest are psychic in origin and may be dealt with by psychotherapy, that is, by focusing treat-

ment upon the mental attitudes of the individual patient; from another point of view, however, such disorders are situational, for they are the result of a sudden social crisis affecting a large number of persons simultaneously and may be, so to speak, infectious. Troops demoralized by long bombardment or similar stress not only develop numerous cases of shell shock in their own ranks but may infect fresh troops with the same or essentially similar disorders. A similar instance is afforded by the forms of personal disorganization characteristic of large urban centers. It is true that psychic factors play a large part; early childhood stresses determining, in a large measure, the persons who succumb to the strains of megalopolitan life. On the other hand, such psychic factors would probably remain latent or at least would manifest themselves only in minor degree if it were not for the adverse situation encountered. Other examples point to a similar conclusion. When a young woman develops personality difficulties after the death of a mother with whom an unduly strong emotional bond has existed, the average person, and indeed the average medical practitioner, would attribute her nervous breakdown to the catastrophic situation alone, whereas less superficial analysis will reveal the fact that the breakdown would never have occurred had it not been for the mental attitude of the daughter developed by long years of contact with the mother. Here again psychic and situational are so closely interwoven that the two should be separated only for purposes of exposition.

MENTAL HYGIENE OF CHILDHOOD A NEW APPROACH

Until the time when the ultimate goal of mental hygiene—the production of the greatest possible degree of mental health—can be more directly approached, prevention of mental ill health must continue along the lines of early detection and treatment of minor functional maladjustments and organic abnormalities that may develop later into serious mental disorders. Inasmuch as situational factors that distort personality development exercise their greatest effects

during the first six or seven years of life, and the beginnings of trends toward mental ill health frequently occur during early life, the mental hygiene of childhood is of primary importance.

Not until the opening years of the twentieth century was the importance of early detection and treatment in the prevention of the more serious mental disorders recognized.

Before that time only the more obvious varieties were recognized and the possibility of prevention was seldom even admitted. Strictly remedial measures, often of the crudest variety, ranging all the way from calomel to flogging and the strait-jacket, were used. When the leaders of the mental hygiene movements made prevention the basis of their program and announced as their purpose "the spreading of a commonsense gospel of right thinking in order to bring about right living, knowledge of which is needed by the public at large if the population of our asylums is to be controlled and eventually decreased," a more hopeful trend began. Since at that time there was little knowledge of just how such prevention could be effected, attention was first centered upon adolescents and adults—that is, those in whom serious mental disorders became strikingly manifest. But as the roots of many maladjustments were traced farther and farther back into childhood, it became clear that most of the work with adolescents and adults could be only crudely remedial, and that the prevention of graver defects, especially where functional disorders were concerned, could be achieved only by early recognition and treatment of minor disorders. Often these disorders were traced to habits and reaction patterns formed in early childhood. But although the primary importance of the first few years of life in laying the foundations of mental health began to be realized, public and professional recognition of the fact was very slow.

For instance, the 1919 Conference on Child Welfare standards gave no directions for specific attention to mental health. The only recommendation dealing with mental conditions at all was one for the psychiatric examination of all atypical or retarded school children.

The striking results achieved by early workers in the field, however, soon demonstrated the value of the new approach. With the discovery that the plasticity of the human organism during childhood makes possible not only the inculcation of desirable character traits, but also the modification of undesirable traits already established, childhood was aptly termed the golden period for mental hygiene. Since recognition of this fact has now pervaded many public agencies dealing with the mentally ill, the movement for the mental hygiene of childhood is by no means limited to the numerous bodies specifically devoted to its promotion.

While the new approach has won its way as an approach, much remains to be done to make it widely effective. Only a very small percentage of children are reached effectively by measures designed to detect and treat functional difficulties such as thumb-sucking, temper tantrums, excessive shyness, fear of particular objects, unduly cruel tendencies, over-assertiveness, and other habit and behavior problems which if unchecked may develop into serious personality distortions or even definite mental illnesses. By the time the average child reaches school, the problem of eradicating undesirable traits and of inculcating desirable ones is immeasurably more difficult than if he were dealt with early in the preschool years. Treatment undertaken during the school period, is seldom prompt and decisive; the personnel and financial resources available are usually too limited to make possible anything other than stop-gap treatment. As a consequence the adolescent years are reached without any fundamental remedial measures having been undertaken, and all too often the dreary round of juvenile court, reformatory, and penitentiary, or of clinic and hospital, has begun. Even such conditions as juvenile epilepsy, the sequelae of epidemic encephalitis, and other disorders with predominantly organic etiology are seldom adequately dealt with when they first become manifest. There is altogether too much talk of outgrowing the physiologic disorders of which the disturbances named are but symptoms; even general practitioners and specialists are unduly optimistic in such

cases, and preventive facilities now available are not being used to the necessary degree.

PROMISE OF EARLY DETECTION AND TREATMENT

It is fairly probable that the health of the mother during pregnancy is a matter of vital importance for the mental health of the child. Direct trauma has been most carefully studied, and offers abundant statistical evidence of the effects of adverse factors upon the development of the embryo—effects which later appear in the form of serious mental handicap. In addition, the history of persistent worry, of neglect, of great emotional disturbances, of malnutrition, and of renal disease in the mother is so frequent in the histories of children suffering from cerebral and spinal disorders that there can be little doubt of the part such factors play in the production of mental ill health.

The embryo itself is subject to various forms of disease. It is fairly well established that syphilis is transmitted directly through the mother—and not indirectly through the father. Therefore when syphilis is suspected thorough specific treatment should be instituted, preferably before conception takes place, or at least during the early period of pregnancy. The fact that active syphilis often leads to miscarriage or to the death of the embryo prevents it from playing a more pernicious rôle than it does—most neurologists claiming that it is a relatively rare etiologic factor. Nevertheless, it is of some importance and should not be neglected.

Congenital tuberculosis is a little more common than syphilis, but it also is seldom related to definite nervous disorders. Since it does have occasional etiologic importance, however, it seems advisable to warn tuberculous women of the dangers that attend conception—dangers to the child as well as to themselves.

It has been claimed but not definitely proved that poliomyelitis and even encephalitis may be antenatal in origin; consequently it is wise to keep the pregnant mother out of reach of either disease in so far as possible.

The mental disorders due to adverse conditions during labor form an important group. Improper obstetric methods leading to prolonged compression of the skull, prolonged dry birth, and unskillful instrumental delivery are responsible for many infantile cerebral palsies. Moreover, undue traction upon the arms or legs of the infant does occasionally give rise to serious palsies, and a recent study has shown that serious injuries to the spinal cord may result from improper manipulations at birth. Children born prematurely, especially during the seventh and eighth months, are sometimes the prey of serious cerebral disorders such as so-called *Little's Disease*.

While there is the possibility of antenatal poliomyelitis and encephalitis lethargica, these occur much more frequently in the postnatal period. Epidemic cerebrospinal meningitis and tubercular meningitis also seem to have a special predilection for the central nervous system. In spite of the fact that an actual infective organism has not yet been discovered for several of the diseases mentioned, epidemics within recent years have taught us that it is wise to isolate those suffering from such diseases.

Postnatal syphilitic infection is relatively rare in childhood, but every precaution should be taken to safeguard the child against possible sources. Syphilis is a disease that takes many forms, but it is quite likely to affect the central nervous system with ensuing neurosyphilis.

Although not so important as in adult life, the rôle of exogenous poisons such as alcohol and drugs of various kinds, must not be overlooked in accounting for the mental disorders of childhood and adolescence. Among the children of some immigrants and some of the native born as well, alcohol is a contributing factor in many psychoses and neuroses. In all probability the various drugs are of even greater importance, judging from the reports from time to time of the activities of peddlers who sell their wares to school children. Probably only persons who are already the victims of fairly marked disorganization come under the influence of alcohol and drugs to such an extent that definite psychotic

states are produced, but nevertheless these exogenous poisons have some etiologic importance. In addition, their use has usually a definite psychopathologic meaning.

Recently much attention has been paid to chronic or focal infections as factors in the production of mental ill health. The mouth, particularly in the regions of the teeth and the tonsils, is the chief primary source of such infections. Secondary foci are sometimes found in the stomach and duodenum. Although startling results are sometimes reported from the correction of such disorders, in general they are assigned a minor although by no means negligible contributory rôle.

While no satisfactory statistics are available, it is probable that endocrine malfunctioning enters into the etiology of many mental disorders. The ductless glands, notably the thyroid, thymus, pituitary, adrenals, and gonads play definite parts in the development and functioning of the organism. Moreover, the activities of these glands are closely related, disturbances of any one frequently bringing about disturbances of the others. Focal infections may also appear in glands. It is sometimes possible to correct endocrine malfunctioning by the use of various glandular extracts, but the remedial powers popularly ascribed to such extracts have been vastly exaggerated. They offer some possibilities for treatment, but it cannot be claimed that mental disorders, apart from such conditions as cretinism and certain other definite glandular deficiencies or excesses, have been much helped by their use.

In addition to the possibility of preventing or at least mitigating the effects of organic disorders, there is the whole vast field of the psychoses and neuroses in which non-organic treatment holds out some prospect of success. For example, although we are by no means sure that dementia praecox and manic-depressive psychoses are solely psychogenic in origin, many cases have proven amenable to non-organic treatment, and in a considerable number of instances relatively complete cures have been reported. Since these two groups comprise about half of all the psychoses occurring among per-

sons under twenty years of age, early detection and prompt treatment of tendencies which may issue in such disorders seem imperative.

With all due reservations with regard to the possible future discovery of organic correlates, there can be little doubt that the effects of situational factors upon personality—experiences at home with parents, brothers, sisters, and companions, at school with teachers and classmates, in the neighborhood, in occupations, in marriage—are of great or even predominant importance in the etiology of the so-called functional disorders. And changes in the attitudes engendered by adverse situations and resolution of the emotional complexes related to such situational factors by psychotherapy, or changes in the factors themselves through social psychiatric therapy, may and often do, play a large part in resynthesizing disorganized personalities.

INCIDENCE OF MENTAL ILL HEALTH AMONG CHILDREN

The vital necessity of making full use of every possibility of prevention is evident from our studies of the incidence of various forms of mental ill health. These may be grouped under the following heads: sequelae of epidemic encephalitis; other organic disorders; epilepsy; dementia praecox; manic-depressive psychosis; the neuroses and psychoneuroses; habit, behavior, and personality problems.

Sequelae of Epidemic Encephalitis

The sequelae of this disease, sometimes called *encephalitis lethargica*, are usually classified among the "psychoses with other brain and nervous diseases"—indeed they account for almost all children included in this category. At present almost ten per cent of all psychoses occurring in persons under twenty years of age may be traced to epidemic encephalitis. Since 1920, when it first became widely epidemic in the United States, it has become a factor in causing institutional commitment. Children who have apparently made a complete recovery, so far as organic changes are concerned, frequently

manifest markedly aberrant behavior, in the form of restlessness in the schoolroom, flat defiance of disciplinary measures, extremely violent temper reactions, uncontrollability at home, wanton destructiveness of property, assaults upon other children, unpredictable episodes that seem almost manic in nature, vagabondage, exaggerated notoriety seeking tendencies, in short, a host of oddly assorted symptoms.

Other Organic Psychoses

The data compiled indicate an almost complete absence among children of those groups commonly called the organic psychoses. Cerebral syphilis, alcoholism, cerebral birth injury, trauma occurring after birth, and in fact the whole group of definite organic correlates of mental disorders show a very low incidence. Psychosis with mental deficiency accounts for about 15 per cent of all cases in mental hospitals. But, inasmuch as mental deficiency—feeble-mindedness and some intellectual subnormality—is not in and of itself a cause of mental ill health as that term is understood here, such disorders are not commonly regarded as indubitably organic. Feeble-mindedness is a mental handicap, but it is not necessarily associated with any particular type of psychosis or neurosis. This low incidence of organic disorders points to the fact that measures designed to foster the mental health of children must be primarily functional in emphasis.

Epilepsy

The incidence of epilepsy is much more difficult to determine from statistics of institutional populations and first admissions than that for other disorders. This is due to the fact that only for the more severe types of the disease is institutional admission usually sought, and it is a further fact that even for these institutional accommodations are very inadequate in most parts of the United States.

The only available index of the real incidence of epilepsy was established when over two million men between the ages

of eighteen and thirty were given physical examinations during the World War. The results were analyzed and published by the War Department in a volume entitled *Defects in Drafted Men*. It is probable that the diagnoses were partly if not wholly dependent upon histories of childhood and adolescent convulsions. If this history were omitted or denied, many epileptics would have passed the physical test, and hence the defect would have been revealed only when seizure occurred. The experience of the draft officials, however, indicated that these histories were freely volunteered, and when this is considered in connection with the nature of the disease, it is quite unlikely that many epileptics escaped detection. For this group, therefore, we may consider the results as quite accurate, and may use them to throw light on the probable present incidence of epilepsy among children.

It was found that 515 in each 100,000 of drafted men were epileptic, the rates varying from a maximum of 1,272 for each 100,000 in Vermont to a minimum of 120 in each 100,000 in South Dakota. These rates may be compared with those for feeble-mindedness—mental deficiency—which is often associated with epilepsy. The average rate among drafted men was 1,206 per 100,000; the maximum was 3,090 in Vermont and the minimum 232 in Arizona. These rates indicate that feeble-mindedness is about two and one-half times as prevalent as epilepsy.

Generalization from these results for the country as a whole is extremely difficult. The age interval of the drafted men excluded children and all persons beyond thirty-one. As there are relatively few epileptics who live to an advanced age, the rate of epilepsy in the latter group was very low. On the contrary, it is very high in the younger groups. It is difficult if not impossible to know exactly how the latter groups should be weighted in comparison with the drafted men. The two extreme age groups might possibly balance each other, in which case the rate of 515 per 100,000 would be a fair statement of the prevalence of epilepsy in the total population, but it would then be considerably too low for the age groups under twenty years. Probably, a safe estimate for

such groups is 800 or 900 for each 100,000 of the total population.

The indications are that about 150,000 children are affected. Recent studies have shown that those under twenty years of age constitute almost one-fourth of the total number of registered epileptics; that epileptics under twenty years of age constitute nearly 50 per cent of all epileptic admissions to institutions for the mentally ill, and that the percentage increases regularly from the group aged four years and under up to twenty years. Moreover, the rate of first admissions under twenty years of age is higher than that of all epileptics, reaching a maximum in the ages from fourteen to nineteen. Probably if a thoroughgoing effort to detect and report epilepsy in the early years of childhood were made, these rates would change considerably, for many parents still believe that their children will outgrow their epileptic seizures and consequently do not permit institutional commitment or even specialized treatment until the late adolescent age is reached.

The most recent studies of epilepsy point out that the exact mechanism occasioning seizures is unknown but that much may be done to prevent, and in the early stages, to relieve, such seizures. Correction of various contributing or precipitating factors such as anoxemia, alkalosis, and edema may often effect symptomatic cure. The important question: "Why under a given stimulus, should one person have the seizure and another not?" still remains unsolved. This variability, presumably related to the subtle chemistry of the cell, in the manner of reaction to a certain stimulus is a quality of living matter and is not peculiar to epilepsy. Its elucidation is a task for the future. When this is accomplished the mystery which at present surrounds epilepsy may be dispelled. Whether or not it will ever be possible to remedy the underlying organic deviation, continued research should bring a better understanding and a more rational and effective treatment of the distressing symptoms known as epileptic seizures. One of the first steps in this research must be exhaustive statistical studies of incidence.

Dementia Praecox

It has already been noted that the various mental disorders which can with some assurance be regarded as primarily organic in genesis are not of major numerical significance in children. The apparent almost complete absence of psychosis among those under fourteen is probably due in part to tardy commitment. Very few under ten years of age are committed to hospitals specifically designed for the mentally ill, although many comparatively severe mental disorders occur at a much earlier age. Dementia praecox, a variety of psychosis which, although of uncertain origin, is being increasingly regarded as functional, constitutes the largest single classification in this or any other age period, and accounts for over 35 per cent of all commitments under twenty years of age. There are more beds occupied by dementia praecox cases than by all other mental patients combined. More than this, they are twice as numerous as persons in hospitals for the treatment of tuberculosis and exceed the total combined population of all institutions for the feeble-minded and epileptic and all state prisons. Of all patients over ten years of age now in mental hospitals, 90 per cent are dementia praecox cases. This is largely due to the fact that such cases enter early in life and have an exceedingly unfavorable recovery rate, so there is a continuous accumulation which is reflected in the striking figures just cited.

Manic-depressive Psychosis

This disorder, which is cyclic with periods of normality dispersed between attacks, and tending only slightly toward dementia is probably of primarily functional origin, and also has a high incidence rate, although not so high as that of dementia praecox. As a consequence of its recurrent tendency about 35 per cent of the readmissions to mental hospitals fall into this group although only 11 per cent of the institutional population under twenty years can thus be classified. This psychosis shows the largest sex difference of any. In al-

most all other categories male incidence exceeds female, but the manic-depressive variety accounts for more than twice as many females as males; about 7 per cent in the institutional population are male manic-depressives while almost 17 per cent are female.

The Neuroses

The neuroses make up the bulk of the clientele of neurologists in both private and outpatient practice. Most of this clientele, however, are adults; only about 1.5 per cent of children under twenty come under this head. The three chief neuroses are (1) neurasthenia, (2) psychasthenia, and (3) hysteria. Neurasthenia is marked fundamentally by an increased liability to fatigue and its concomitant irritability. In psychasthenia there may be a tendency to recurring fears of all kinds, obsessive ideas and doubts, and impulsions and habits which range from the compulsion to take three steps at one time to the practice of biting one's nails to the quick or of washing hands repeatedly. Hysteria, which almost defies brief descriptions, is often characterized by emotional instability, extremely labile personality, and sometimes by paralytic symptoms yielding remarkably to any energizing influence.

Behavior and Personality Problems

Behavior and personality problems include such institutional classifications as psychosis with psychopathic personality, some undiagnosed psychoses, behavior problems without psychosis and, in addition, all the non-institutional cases which may be termed habit and behavior problems. Only about 17 per cent of all institutional cases are thus grouped, but the real numerical significance of the classification does not appear until attention is directed to the disorders of early childhood. Even as early as four years of age it has been shown that more than 35 per cent of the apparently normal children of self-sustaining families, average in intelligence, have behavior problems sufficiently marked to make treatment desirable. The bulk of the problems presented at this

age are included under the rather general categories of fears, extreme shyness, severe speech difficulties, and the more precise phenomena of tantrums, interference with appetite for and use of foods, and enuresis. A comparison of figures will show that these evidences of deviation from mental health appear with an incidence higher than that of any other defect or disorder of apparently normal childhood with the possible exception of dental abnormalities. Such behavior problems do not by any means indicate any future insanity, but at the same time it should not be forgotten that by far the greater number of functional disorders are first evidenced by apparently minor disturbances in childhood. In all such cases prevention of graver disorders in later life calls for prompt and proper treatment during the very early phases.

Consequences of Childhood Disorders in Adult Rates

The foregoing data, although significant, do not adequately reflect the real situation, for many organic and functional disorders which have their origin in the childhood years exert their full destructive effect only when the adult period is reached. Consequently, some consideration of the older age groups is vitally necessary.

There are in mental hospitals about 250 patients over fifteen years of age for each 100,000 of the general population; 80 for each 100,000 population are admitted each year, 70 for the first time. Moreover, the large number now confined in such hospitals—a total of about 300,000, occupying more beds than patients from all other diseases combined—by no means includes all persons in obvious need of hospital treatment for mental disorders, since the facilities in many sections of the country are grossly inadequate. If all states made provision to the extent that some more highly organized states do, the number of patients would be in excess of 400,000—almost half a million! In addition to these there are the many neurotic patients occupying beds in general hospitals or who are not in hospitals at all.

Are mental disorders increasing or decreasing? Since facilities for detection and treatment of mental disorders have notably increased in recent years, no unqualified answer can be given. In so far as census data on hospital commitments are valid, however, there is no doubt that from 1910 to 1923, mental disorders among persons from ten to twenty increased markedly and that on the basis of statistics relating to some of the larger states this increase, with one or two exceptions, has continued since 1923 predominantly, if not wholly, among males. These increases are both absolute and relative; hospital commitments have more than kept pace with the growth of the population.

Although the figures based on commitments are large, they are greatly increased when the number of mentally ill persons outside hospitals for mental diseases even in states with relatively excellent provision is added. The medical examinations of men for the army detected a certain number with psychoses, who of course were not in hospitals. In New York State the number was almost 400 for each 100,000, *omitting* neuroses. Including the latter, there were almost 600 for each 100,000 suffering from psychoses or neuroses sufficient to incapacitate them for army service. Data from other states reflected a similar situation.

These added to the numbers of those now in hospitals for mental diseases make a total of about 900 for each 100,000 who are afflicted with psychoses or severe incapacitating neuroses. Indeed, some authorities put the figure as high as 1,300 for each 100,000. Probably about 1 per cent of the total population is thus affected.

Further, the results of a study in the expectation of mental diseases show that approximately 4.5 per cent of persons born in the State of New York, which affords excellent data for statistical computation, may under existing conditions be expected to succumb to mental ill health in one form or another and to become patients in hospitals for such disorders. In other words, about one person out of twenty-two becomes a patient during the lifetime of a generation. On the basis of these and similar figures, careful students of the problem

have concluded that when age, differential incidence, and mortality rates are taken into account, the chances of commitment to hospitals for the mentally ill of persons in states with good facilities are about one in twenty. In addition, the chances of developing a psychosis or severe incapacitating neurosis, whether sent to a hospital or not, are about one in ten.

URGENT AND PRACTICABLE REMEDIAL AND PREVENTIVE PROGRAM

The numerical evidence of the magnitude of the problem may at first sight seem overwhelming, but it should be borne in mind that the actual yearly incidence of mental ill health is very much less than is indicated by figures based upon age-differential and mortality rates. Probably the chances that a given child will develop a habit or behavior problem eventually leading to incapacitating neurosis or psychosis in any given year of its life are about one in sixty, or even one in eighty. This places the matter in a more hopeful light; if facilities can be developed which will prevent this relatively small proportion of children from succumbing to mental ill health, incidence figures will soon lose their overwhelming character. Hence the necessity for developing immediately a comprehensive program for the early detection and treatment of mental ill health and for the furtherance of mental health.

Our knowledge of causal factors and of methods of treatment is still far from complete, but what we already know provides a sufficient basis for a determined nation-wide effort.

The work of behavior clinics, child guidance clinics, outpatient departments of general and mental hospitals, and a host of similar agencies has demonstrated experimentally that an extensive program is feasible. Although careful studies of the final results of treatment are at present lacking, it may be asserted with some certainty that much mental ill health among adolescents and adults can be prevented by

proper attention to the mental hygiene of childhood. At present more than six hundred clinics in the United States are exclusively or partially engaged in such work, and although their reports are sometimes overoptimistic, it is certain that work of great remedial and therapeutic value is being done as well as a large amount of direct and indirect prevention. New techniques are always welcome. It is also true that facilities already existing should be greatly extended and coordinated. We have not yet applied even the present knowledge necessary for prevention widely and systematically enough to ensure any noticeable decrease in the present high incidence of mental ill health. In the case of the graver mental disorders altogether too few persons in need of treatment are reached in time, and minor defects that may eventually give rise to more serious mental illness are even more neglected.

Community Responsibility for Practical Program

The primary responsibility for a practical mental hygiene program ultimately rests upon local communities. No program that is passively accepted from without can ever meet the situation. The state must provide facilities transcending those of the local community, but, if any mental hygiene program is to be practical the county, town, or city must assume primary responsibility.

Moreover, a community must be properly equipped in other fields—educational, social, health—and organizations in these fields must be doing their share if mental hygiene clinics are to function properly. The community must organize itself as a whole in order to ensure the carrying out of clinical recommendations, and more especially, in order to provide all types of recreational, cultural, and social opportunities important in the development and organization of personality. Studies of delinquent areas have shown just how important the physical environment and the material culture in which the child develops may be. Although the rate of delinquency for a given neighborhood may be fairly

constant, the raw human material of that same neighborhood may entirely change with the changing nature of the immigrant stream. To choose one obvious example: the young Negroes of a certain Chicago district now appear in the juvenile court in about the same proportion as did the Poles and other peoples who successively inhabited this same neighborhood before them. When streets are crowded with the sordid trappings of factory industries and the people are crammed into close-packed tenements, when children's play is forced into dirty alleys and upon thronging sidewalks, the inevitable result is a high rate of undesirable and antisocial behavior. And when to the squalor, noise, and filth is added a traditional neighborhood tolerance or even approbation of "junking" and other petty thievery from railroad yards, stores or warehouses, to say nothing of other minor offenses, the child's behavior almost inevitably leads to encounters with the police and the courts. No community that takes such conditions as a matter of course can ever hope to reduce significantly the socially aberrant behavior of its children. The communities of America are confronted by the challenging idea that community planning must provide for adequate expression of normal childish interests and impulses, and not merely for excellence in transportation facilities, sanitation, and architecture, important as these may be. A community consciousness of the social problems of children must be developed. For example, school equipment must no longer be locked up so that it lies idle through the after school and evening hours, and the long summer vacation, which when unsupervised provides so many opportunities for antisocial behavior, should make available legitimate outlets for the energy of childhood. The experience of many communities has demonstrated that in the long run nothing is more economical than provision for every side of the child's nature. Mere repression accomplishes nothing. The fact must never be lost sight of that every person—child, adolescent, or adult—is a social personality involved with, reacting to, and influencing a total situation, and that the best remedial and therapeutic and preventive facilities may be rendered useless

if the community elements in the total situation promote mental ill health. No program is or can be practical if it does not form an integral part of a community functioning as a whole.

Nor is this all. The whole structure of any given community is extremely important for the mental health of the individuals therein. Ideals are expressed in many ways and organization expresses these. Even such matters as housing enter in. So do the types and management of industry and business, education, public health, and religious activities. Ethical and moral standards vary from community to community, and from section to section of communities.

Only careful planning and development of all the possible resources of the community will meet the greater needs of the developing citizen.

Proper Guidance of Community Effort

Only a broadly conceived and administered program can be of real worth in combating mental ill health and promoting mental health, and local communities have a large or even major share of responsibility for such a program.

A strong state agency is a vital requisite not only for the direction and control of the more general aspects of the work of local mental hygiene agencies, but to establish standards, to maintain a comprehensive confidential exchange, to coordinate and direct local efforts, and to offer facilities that local communities cannot provide.

Establishment of Standards. Although a good deal of responsibility rests with the local welfare and educational officials, the state should be equipped to set standards. Very few states have so far accomplished this end. The state should furnish a service that will enable the local community to make sure of the competence of its clinicians, visiting nurses, teachers, probation officers, and psychiatric social workers, and establish uniform statistical procedure and standard classifications abreast of the latest discoveries in dynamic psychiatry.

Comprehensive Confidential Exchange. Many mentally ill persons can be greatly helped if adequate records are kept in a central repository open only to responsible persons. The state is obviously the only unit fully qualified to take charge of such an exchange.

Coordination and Direction. Instead of a branch of the central state organization operative in each county, it seems advisable to supervise the work of local communities, thus assisting these communities to make full use of facilities offered by the state. If this program is to yield full benefit to the mentally ill and to their more fortunate neighbors as well, there must be coordination of state and community activities. No program is practical if it does not form an integral part of a community functioning as a whole.

FOUR ZONES OF REMEDIAL AND PREVENTIVE PROGRAM

There are four major zones in which facilities for promoting mental health are now operative: (1) remedial work for the obviously ill; (2) therapeutic prevention of grave disorders by prompt and effective treatment of minor mental ailments; (3) constructive prevention; (4) research. Although the same organization, for example, the child guidance clinic, sometimes operates in at least three of these zones, there is sufficient differentiation of function to justify separate discussion. A practical program naturally involves provision for all four.

Remedial Work for the Obviously Ill

Wider extension of facilities for the care of early and acute cases of the graver mental disorders of all age groups is urgently needed. This may be done through psychiatric wards or departments in general hospitals, psychopathic hospitals, and state mental hospitals. There should be provision for competent medical and nursing care with a minimum of restraint and legal formality.

Psychiatric Wards or Departments in General Hospitals. Such facilities may be of great service in first aid for the

mentally ill even when a state hospital is nearby. Some small communities do not have a general hospital upon which they can rely, but no community is too small to provide a safe and comfortable place, competent medical and if possible psychiatric supervision, nursing attendance, and a minimum of restraint, all of which are part of the temporary care given those who suddenly become mentally ill. This care which should be available for children as well as for adults must, however, be genuinely temporary, for nothing short of genuine hospital care can fully meet first-aid requirements. Mental patients in advanced stages are really ill. If the requirements are not met with some degree of adequacy, the consequence may be death or incurability.

Psychopathic Hospitals. These are small, highly specialized hospitals functioning quite similarly to those of the psychiatric departments of general hospitals. They rarely have more than two hundred beds, and deal exclusively with cases suspected of or definitely afflicted with mental disorders. Psychopathic hospitals are almost always located in large cities, where they have the best opportunity to serve patients who would otherwise have to be sent to psychiatric wards in general hospitals or directly to the large district state hospitals. The psychopathic hospital can admit patients quite as informally as can the psychiatric ward of the general hospital; it is small enough to give individualized treatment, something extremely difficult for large state hospitals, yet important in the early stages of most mental disorders; it is large enough to maintain an adequate staff of psychiatrists, psychologists, and psychiatric social workers, which is rather difficult in a mere department of a general hospital; finally, it can most easily be linked with the teaching and research functions of graduate schools offering instruction in psychiatry, a linkage which is beneficial to student, teacher and patient.

Psychopathic hospitals also act as clearing houses: some cases are returned to the community; others requiring extended treatment or custodial care are sent on to the state hospitals. In short the psychopathic hospital fills an extremely

important niche, particularly in the larger centers of population, and its importance will probably increase.

State Hospitals

For Children and Adolescents. Hospitals for maladjusted children needing extended observation and treatment should be available in every state. There are few wards or departments devoted to this purpose in state mental hospitals, and fewer whole hospital units specifically designed for the care of children. In addition to all facilities provided for treatment by psychiatrists, psychologists, and psychiatric social workers, academic, occupational and physical education that makes the most of all the capabilities of the child should also be provided. The period of segregation should not hinder school advancement. In the very nature of things, some children's institutions for mental health cannot be expected to care for the large numbers of less serious cases, but they may prove extremely useful in dealing with cases that require greater control of the total situation than is possible without segregation. Fortunately, in many cases, there is opportunity to deal with problems as they arise in their usual setting.

For Adults. State mental hospitals for adults do not, strictly speaking, fall within the scope of this report, but the fact that in most states children and young adolescents are sent to such hospitals because no other place is available for them, makes it necessary to include them. Every community should make sure that the hospital serving it has the extensive facilities necessary to give individualized treatment to children at least. Although such treatment is also highly desirable for older persons, the advanced states of mental ill health often found in adult life do not make the results of such treatment as promising as in the case of children. Individualized treatment is vitally necessary if genuinely remedial practice is to be followed. All too often children's symptoms are treated rather than a total personality involved with, reacting to, and influencing, a total situation. At present even in the states in which mental hygiene measures are most advanced,

institutions are so overcrowded and personnel so limited that they are unable to give sufficiently individualized treatment.

Therapeutic Prevention

Therapeutic prevention, that is, proper treatment of minor maladjustments, may frequently prevent graver disorders. This may be accomplished by means of outpatient clinics, child guidance clinics, and habit clinics for preschool children.

Outpatient Clinics. In order that early and mild psychoses, neuroses, and less serious behavior problems may be effectively treated, greater, but more particularly, better facilities for outpatient service in both general and state hospitals are urgently needed. They are especially valuable in the early treatment of mental cases, and in following up discharged cases. To be completely valuable, the hospitals must be better staffed and have better treatment facilities. Then the advantages of such clinics may be more generally realized. These advantages include: a maximum number of patients treated at a minimum cost; assistance given at a time when it is most hopeful and the patient is still capable of realizing his own needs; treatment given in a manner acceptable to the patient and compatible with his social and economic obligations. These clinics also serve as a means of education not only to the staff of the mental hospital itself, but also to the physicians of the community who send patients for consultation, to those who attend, and to the lay public. The community eventually learns that here is a new way to get help in some of its troublesome problems, and the prejudice against the mental hospital is broken down.

Under present conditions this prejudice is so strong that patients and their advisers frequently procrastinate disastrously in obtaining treatment. The necessary steps are finally taken as a last resort—perhaps when the disturbing, unmanageable behavior of the patient makes such action inevitable. As a consequence of this delay, mental difficulties often reach a stage where therapeutic measures are of little

avail. The experience of mental hospitals with outpatient facilities indicates that there is not only a growing willingness on the part of relatives and physicians to place the patient under suitable psychiatric care during the early stages of mental illness, but in addition there is an increasing readiness on the part of patients themselves voluntarily to avail themselves of the benefits of early expert diagnosis and treatment.

While outpatient facilities are developing at a rapid rate, an altogether disproportionate amount of attention is given to the disorders of adult life, although such disorders offer a much less hopeful prognosis than the mental difficulties of children. Special outpatient care of younger children and adolescents has not developed in proper proportion. Clinical facilities should be more extensively available to courts, social agencies and school systems.

Three major types of problems are encountered: (1) the child whose behavior is such that he is recognized as a delinquent; (2) the child whose future is in the hands of an agency; (3) the child who is a behavior problem in school. The mental difficulties encountered range from serious to mild. Frequently situational factors are the most important from a therapeutic standpoint.

Child Guidance Clinics. These function primarily for the community as a whole and especially for the average normal child in the average normal setting where there are indications of disturbance in social adjustment. These organizations may be a part of the public school system, set up in relation to social agencies, or as a community agency. They serve schools, agencies, and parents, and deal with general behavior disorders such as tantrums, stealing, over-sensitiveness, day-dreaming, cruelty, restlessness, morbid fears, and so forth. These are often, if not always, symptomatic evidence of underlying mental ill health, and are sometimes direct precursors of disorders serious enough to require eventual institutional commitment.

The child guidance clinic is organized about a three-fold nucleus of a psychiatrist, who is usually medical examiner as well, a psychologist, and a psychiatric social worker. This

type of organization is necessary because of the almost invariably complex causation of behavior problems, each case demanding careful and thorough study in terms of a total situation. This necessitates an orienting physical examination followed by the special examinations—serologic, endocrinologic, and laboratory—as seem indicated; neurologic and psychiatric examinations; psychologic examinations, to establish the intelligence level and ascertain any special ability or disability as well as the degree of educational achievement; and a very careful study of the past and present situations which have affected the personal and social history of the child. Each of these examinations is an integral part of the study of the whole child; each is necessary for complete understanding of the child as a total personality involved with, reacting to, and influencing a total situation.

Child guidance clinics may also be helpful in dealing with children or young adolescents paroled from hospitals and scheduled for eventual discharge from custody. They should not only have the advice of psychiatric social workers who visit them periodically, but should also have the benefit of periodic clinical treatment designed to help them effect successful adjustment to their home communities. In many instances a return to the hospital may not only be prevented but the degree of success achieved in adjustment may be greatly increased.

Clinics of this sort should be available in all juvenile courts and other agencies dealing with children. Delinquency and other types of childhood maladjustment are usually, if not always, related to mental illness. The greatest mistake a community can make is to treat boys and girls as incorrigible young criminals when in reality they are mentally ill, and to treat as unemployable adolescents who are really in need of psychiatrically supervised vocational guidance.

The child guidance clinic may prove helpful in giving advice and minor treatment to adolescents who feel in need of it but who shrink from more formal procedures which may bring them to public attention, or which deal with their cases from the legal viewpoint of insanity. The extent to which

adolescents avail themselves of these consultive opportunities depends upon the extent to which the existence of such opportunities has become known to the community. A vigorous campaign of education will do much to spread the knowledge. In smaller communities the regular medical practitioner who has some knowledge of mental hygiene principles can do a great deal toward remedying minor disorders, but wherever more specialized facilities can be made available it is best to do so.

Habit Clinics for Preschool Children. Although child guidance clinics deal with preschool children as well as with those of school age, habit clinics treat preschool children exclusively and as the name implies deal with habit difficulties such as bed-wetting, thumb-sucking, food dislikes, temper tantrums, jealousy, and so forth, on a less intensive basis than is true of the usual child guidance clinics. Such apparently minor difficulties often develop into definite behavior problems by the time the school age is reached. Habit clinics often function in conjunction with nursery schools and kindergartens, but not more than one child in six attends any of these. Such clinics must draw on the much larger proportion of children who do not attend them if their efforts are to account for much in the community. These clinics are extremely valuable agencies, for they reach the child in the most plastic period of life, "the golden period for mental hygiene."

Constructive Prevention

Constructive prevention is a zone of effort that is largely educational, and is directed toward adults in an effort to prevent their causing mental difficulties in children and to the children themselves, thereby helping them to prevent or solve their own difficulties.

Properly developed, constructive prevention, direct and indirect, may become the greatest force for developing mental health. Early detection and therapeutic measures are and will be indispensable, but they are after all restorative in emphasis. Constructive prevention has the greatest possibilities

for producing a state of well-being in which the person realizes the greatest success his capabilities will permit, and in which social relations are both personally and socially satisfactory.

Indirect Prevention

Much emphasis has already been laid on the need for dealing with the whole child—of considering the total situation. Constructive prevention makes this need especially evident. Quite often the situation rather than the child must be treated, and most important in the situation are the adults who constitute the dynamic elements. Personal and social histories of maladjusted children often reveal the heavy burden of responsibility chargeable to those closest to such children. Treatment of the child or for that matter, of the adult, as a separate unrelated entity is not enough; he cannot be detached from a total situation involving home, brothers and sisters, school, neighborhood, companions and community as a whole. It is a commonplace saying among specialists treating mental ill health that often it is not the child who requires preventive treatment but rather the adults who are temporarily or permanently in intimate contact with him. Anything which lends constructive values to adult understanding and attitudes helps to prevent mental ill health in children. The creation of such constructive values in adults is of course direct prevention so far as the adult is concerned, but our chief concern here is with the child, and hence indirect prevention is the primary goal of effort.

Consequently an indispensable part of a practical program for any community is mental hygiene education, emotional and intellectual for the adults who control the environment of children. This should include professional education, general adult education, and preparental and parental education.

Professional Education. The teaching of the principles of mental hygiene as related to their own work should be a part of the training of those professional groups, pediatricians,

general medical practitioners, nurses, public health officers, teachers of regular and special classes, visiting nurses, educational counselors, vocational guidance workers, school psychologists, school administrators, social workers, policemen, probation officers, juvenile court judges and similar officials, church workers, boys' and girls' club workers, playground supervisors, and so forth, whose work brings them into intimate contact with large groups of children. These persons often make great efforts to help problem children coming to their attention, but since they sometimes lack knowledge of proper emotional attitudes, they may fail to help or may even harm such children; moreover, they may inadvertently harm mentally healthy children as well. Hence the need for training in the basic principles of mental hygiene.

The general practitioner of medicine is perhaps more in need of such training than anyone else. It has so long been assumed that the problem of mental illness is a remote and esoteric subject that many otherwise well informed physicians frankly confess their lack of knowledge of and inability to treat such cases. In justice to the directors of many modern medical schools, it must be said that efforts are made to interest students in mental hygiene but the overcrowded curriculum for which these directors are in part responsible does not offer sufficient time to teach even the rudiments of the subject. After leaving medical school, the young physician seldom has opportunity, either in the general hospital or in private practice, to see more than an occasional case of one of the graver mental disorders. As a consequence he develops very little interest in either the therapeutic or social-economic aspects of the problem. Under these circumstances he cannot, except in rare instances, be expected to direct the mental health activities of a community in which he practices, highly desirable as this might be. If the medical profession more completely understood the various evidences of mental disorder, their treatment of the numerous functional ills which now drive their victims from doctor to doctor or from quack to quack might be more intelligent. Further, it is highly improbable that the many schools of pseudo-science would have

gained so firm a foothold if the medical profession itself had earlier recognized that although such disorders may perhaps be imaginary they are none the less serious and in need of treatment. The local community certainly cannot be expected to provide training for professional groups. Such training is indubitably a function of the state, and may be carried out through extension courses in the various county medical societies, by traveling experimental clinics, or by clinics in psychopathic and state mental hospitals.

Psychopathic hospitals in particular should be teaching centers for the medical and nursing professions in the principles and objectives of mental health work. Medical students, interns, graduates, fellows, nurses, psychologists, social workers, occupational-, physical-, and hydrotherapists might easily be taught in such hospitals, particularly through practical clinical experience. This function may best be carried out in cooperation with a teaching institution, both undergraduate and postgraduate. The hospital need not be an integral part of any medical school or university, but should be closely affiliated, and its staff should have opportunity to follow the lectures, laboratory, and special investigations conducted by the school. The faculty and technicians in the medical school and in the departments of biology, physics, chemistry, bacteriology, psychology, sociology, public health, statistics, and pedagogy should be available for teaching, consultation, and research purposes.

The professional training of specialists in the field of the mental hygiene of childhood may also be carried out in close cooperation with psychopathic hospitals. At the present time there is a great deal of variation in the amount of useful psychiatric experience derived from internship. Interns in some small state mental hospitals in the less populous areas may, through no fault of their own, fail to come into contact with more than a fraction of the cases which an intern in a psychopathic hospital located in a large urban center or a large district hospital located in one of the more densely populated states may deal with in the same length of time. As a consequence the former group of interns is personally

handicapped in later professional advancement. The loss to the movement for better mental health among children is tremendous. There is at present a great shortage of suitably trained psychiatrists, psychologists, and psychiatric social workers, with psychiatric experience; any situation which hampers the expansion of the already limited personnel available must be altered as soon as possible. One of the best ways of doing this is to grant fellowships in psychopathic hospitals for students who are completing the earlier stages of their training and in child guidance clinics and similar extramural clinics for those who are in the last stages, that is, who are familiarizing themselves not only with symptom-patterns but with the whole child in a total situation. It is difficult to overemphasize the importance of this last stage of training. Psychiatrists and psychologists are apt to be handicapped by an individualistic point of view, owing in part to their common participation in American culture, and in part to the narrowing influence of hospital training, which tends to be favorable to relatively static description rather than to the genetic and dynamic conceptions so necessary if genuine therapeutic and constructive prevention is to be achieved. Laboratory training is invaluable and cannot be dispensed with, but in and of itself, it has relatively little value; it fulfils its true function in the total process of treatment only when it has been catalyzed by contact with the world outside the isolating walls of the hospital.

Obviously, the issues to be met in any training program are extremely complex because of the several different professional fields represented and the variations in procedure necessary to meet the needs of given individuals. Probably the fundamental type of experience is that of carrying cases for intensive treatment—certainly the larger share of training should be devoted to such cases. The routine stage of preliminary physical and chemical examination, which of course must be carried out in considerable detail, is followed by personal and family history, and so forth. When these data have been gathered the particular case should be discussed from time to time in conferences participated in by the

three-fold unit staff and a combined treatment attack carried out as intensively as needed over as long a period of time as seems profitable in terms of the working out of the case problems. Such detailed studies and intensive treatment furnish the clearest ideas of the interaction of the various factors which produce disturbing behavior or personality traits. Such studies are of course time consuming, and if the entire work of the individual were limited to such cases the number which could finally be studied would be insufficient to give a well rounded experience with varying types of problems. Hence it is also desirable for the student to study a larger number and variety of cases in less detail. There are various possible sources of such case materials: for example, such a special project as the study of all the children in one small school may be undertaken; again, certain children referred by parents may be treated by a modified scheme of investigation, particularly in the social field, which enriches the experience of all without increasing materially the load of intensive treatment cases. In all of this extramural experience the child guidance clinic or similar agency is of the greatest value and should be made use of whenever and wherever possible. To reiterate: professional education is incomplete if there has been no training in the study of the whole child.

General Adult Education. If professional groups alone were relied on, public health work could not progress very far. The wisdom of large scale advertising campaigns to acquaint the public at large with elementary health facts has already been amply demonstrated. The same is true of any program for furthering mental health; it must include lectures, radio talks, sermons, distribution of literature, newspaper and magazine publicity, and every other legitimate means of reaching the public. Women's clubs, men's luncheon clubs, fraternal organizations, church societies, and similar bodies should be given mental hygiene information and should if possible be persuaded to aid in its further dissemination. If the attitudes of the adults who create the situations in which children must develop, promote mental health, the

larger part of the task of prevention is accomplished. Developing in adults attitudes that promote mental health is, however, no easy task. Strenuous and long continued effort is indispensable.

Preparental and Parental Education. The most important people with whom children come in contact are of course their parents. Important from a biologic point of view, they are even more important because their attitudes and conduct are reflected in one or another way in their children.

It is well, therefore, to bear in mind that all the community agencies concerned with the mental hygiene of childhood are likely to succeed in direct proportion to the cooperation given them by parents.

Preparation for marriage and parenthood is seriously needed.* Either by special agencies or through facilities functioning in other capacities as well, young people should be guided to personal adjustment before marriage. Instruction in the principles of adjustment to married life should also be provided, either in the early part of the marriageable age, or better, just before marriage takes place. Further, education in child care and training, either before or after marriage, is highly desirable. The marital clinics could also play a useful part in preparental education specifically, by advising pregnant women and their husbands regarding necessary adjustments after the birth of the child. This specific function might simply be an extension of the prenatal work of the marital clinics.

A great deal of specialized information is necessary in order to be a successful parent, but mere information, although indispensable, is not enough. Mental hygiene training is useless or worse than useless if it remains in the purely intellectual realm; verbal manipulation of concepts and categories, glib discourse about complexes and fixations, pseudo-sophisticated palaver serving ego-gratification, and similar

* See *Education for Home and Family Life. Part I. In Elementary and Secondary Schools. Part II. In Colleges.* Publications of the White House Conference. New York, The Century Co., 1932.

practices have no place in parental education. All mental hygiene training must have direct meaning to the person in terms of his own life and experience; he must reach the stage of insight into his own problems and must be able emotionally to assimilate conflicting currents that are thereby revealed in his personality. It should also be noted that well integrated, well adjusted parents who are abreast of the attested features of child care probably do not need specific parental education and indeed may be better off without it. It is quite often possible to break up a harmonious adjustment in the effort to intellectualize it or to remedy some altogether insignificant maladjustment. There is a large reservoir of folk wisdom which, although it has many erroneous components, has also a tremendous amount of aid to offer in achieving psychical and situational harmony. Most moderns are out of touch with folk wisdom and consequently are compelled to find their lore in books and elsewhere, a condition which has resulted in the overestimation of formalized knowledge. Quite frequently the inarticulate practices of a mentally adequate but unsophisticated parent may be more fruitful in terms of the mental health of children than all the elaborate verbalisms of the amateur psychoanalyst.

In many instances, however, parental education is necessary, but it must be sufficiently thoroughgoing to reach deeper than the intellectual level. Any effort with parents should penetrate to their own emotional attitudes and personal blockings. They should be awakened to their own importance in the total situation of the child, and to some conception of the relation of their own drives to that situation. Parents often have exaggerated emotional reactions to such problems as stealing, lying, masturbation, and temper tantrums, but may allow jealousy, undue self-consciousness, excessive day-dreaming, and other evidences of grave personality deviations in children to pass unnoticed.

Parents need help in understanding the phenomena of child development and in grasping relative values in family situations. This can be given best by aiding them to understand their own reactions toward the children which often

result from mental problems of their own needing careful study. Many parents create problem situations of which the behavior disorders in the children are but symptoms. Hence every community mental hygiene program must ensure parental education for the socially privileged as well as for the socially unprivileged.

Closely related to parental education is the re-education of the relatives and friends of children who have developed behavior problems, particularly problems that necessitate extended treatment. Oftentimes the most careful therapeutic measures are rendered useless because sufficient care has not been taken in the instruction of friends and relatives. Where commitment has been necessary, adult reeducation during the time the child is in the hospital is of much importance; this requires the arousing of interest and careful adjustment. In addition, it is often advisable to work out a careful plan for governing the behavior of intimates before the child is returned to the family and community; if proper cooperation has been attained this not only helps him to make a better and more permanent adjustment, but also renders subsequent supervision more effective.

As a general conclusion it should be said that constructive attitudes are more important than ability formally to state mental hygiene principles. Visiting teachers, physicians, boys' and girls' club workers, parents, and relatives, frequently exercise extremely beneficial influences in the lives of children because they have attitudes and correlated practices that promote mental health in all the children with whom they come in contact. Such persons, however, are successful in the degree to which they consciously or unconsciously successfully apply mental hygiene principles. A great deal of excellent mental hygiene work is done without ever mentioning it by name; indeed, it is often done by persons who have never heard the term *mental hygiene*. Insistence upon the necessity for indirect constructive prevention through professional, preparental, and parental education should not lead to the conclusion that all adults must immediately be educated in order to prevent mental illness in their offspring. At the same

time it cannot be denied that until more adequate positive programs have been developed, our negative efforts must fall short of full effectiveness and indeed may do positive harm if a proper balance between the two cannot be established. The ultimate goal, positive mental health, must always be the guide of all proximate endeavor.

Direct Prevention

Although the extreme importance of indirect prevention is beginning to loom larger than would have been thought possible a decade ago—so much so that interest is now shifting from the child to the adults who create the situations that shape his personality—it is still necessary to lay great stress upon the inculcation of proper mental hygiene attitudes in the child himself, that is, upon direct constructive prevention. In addition to adult influence in general and parental influence in particular, this may be done through nursery schools, kindergartens, and other preschool organizations, through organization of public school programs so that they center about the child, his capabilities, and his adjustment to life rather than about subject matter, through education of grade school children in the principles of social relationships, and through courses on personal mental hygiene in high schools and colleges.

Nursery Schools and Kindergartens. These agencies should be considered a vital part of any mental hygiene program, especially in the larger cities where children often have little opportunity for healthful interaction with those of their own age. They are most useful when members of their staffs have had training in psychiatric social work, for then they can deal with the child in his home and neighborhood situations as well as in the school situation. Frequently helpful parental education results from contact with well trained workers. Much if not most excellent mental hygiene work does not bear the label, and preschool agencies have a splendid opportunity to exert beneficent influence in ways that do not focus undue attention upon either parents or children.

This is often of great value in dealing with oversolicitous parents or oversensitive children. In such cases overt therapy sometimes aggravates the situation whereas more casual methods reach the desired goal.

Proper Organization of Public School Programs. Little can be said on this head here except that adjustment to life rather than subject matter implies much more differentiation in school programs than is usually practiced. Special classes are a step in the right direction, but all classes should, in a sense, be special classes—that is, they should be differentiated to the extent necessary to fit the needs of every mental level and every social group. This may be costly, but it is cheaper than the terrific costs of delinquency, crime, poverty, and dependency so inevitably resulting from educational misfits. No community can afford to be penny wise and pound foolish in the organization of its schools.

Education of School Children in Social Relations. When children are properly prepared to face social realities, the familiar adolescent disillusionment and cynicism so often correlated with mental ill health has less chance to develop. Overridealistic teaching should give way to at least a modicum of realistic discussion.

It should be clearly understood, however, that for a long time to come the inculcation of proper attitudes toward the more intimate relationships—sexual, for example—can best be left to intelligent and emotionally adequate parents. The school can perform only in a substitute capacity, usually with less satisfactory results. If, however, parents shirk or are incapable of carrying out this necessary function, the duty devolves upon the school, and an enlightened community will insist that the school perform it well. Since teachers are often in need of adjustment in their own lives, it may be necessary to give them special training if they are to meet adequately the community demand to function as substitutes for parents.

Moreover, every effort should be made to impress upon teachers that mental health programs are not limited to the maladjusted, the unmanageable, the liar, the truant, the sex delinquent, the queer, and the difficult—that is, to problem

children—but are quite as much concerned with presumably normal children.

The child who appears to be normal—that is, who maintains his grade and presents no outstanding behavior problems—should nevertheless be surrounded by influences that tend to develop the right kind of mental habits, emotional control, and all those personal qualities that promote successful social functioning.

Consciously or unconsciously the teacher wields a tremendous influence in the lives of most normal children. If she drives her pupils to knowledge, regardless of all else; if she maintains discipline only by threats and punishment; if she keeps herself and others nervously tense and overwrought; if she arouses in her pupils harmful emotions such as anger, hatred, jealousy, and resentment; and if by her bitterness and tactlessness she arouses or accentuates feelings of injustice, discouragement and inferiority, she may warp the personality of even the most normal of the children under her sway. On the other hand, the teacher who thinks more about the pupils themselves and about their personal development than she does about their grades can be a tremendous force in promoting the mental health of her charges. Poise, even-handedness, understanding of and allowance for varying personality traits, ability to encourage and to give a sense of achievement, are all greatly to be desired in the teacher, for such qualities definitely further mental health in the children she teaches.

Courses in Personal Mental Hygiene. In our complex culture the period of adolescence is often one of intense mental conflict; anything that can be done to alleviate this may be a direct prevention of mental ill health. During this period it is sometimes advisable to give instruction in mental hygiene by implication rather than explicitly, although some high schools and colleges have successfully followed the explicit method for all students. In the latter case, the educational program has often been divided into informational courses for freshmen and honor courses for high grade seniors. In addition to this, some attempts at the education of the faculty

is usually made through lectures on mental hygiene and behavior and through round table conferences on methods of handling behavior problems, disciplinary problems, and the disposition of acute cases. It is obvious, however, that such an educational program is not enough; some service to students should be provided in addition. This will almost necessarily be voluntary on the students' part, although at times tactful suggestion that examination is necessary may be in order. When application for service has been made, there should be a preliminary sifting of cases by a psychiatric social worker. For those cases needing further study, thorough examination by psychiatric social worker, psychologist, physician, and psychiatrist should be provided. If necessary, whatever psychotherapy or psychiatric social treatment proves advisable should be given free of charge or for a nominal fee. The Dean's office collaborating with the mental health division can also be of much service in giving vocational and educational guidance.

Those educational institutions which are not large enough or which do not see the need of a complete mental health division should at the very least provide educational counselors or student advisers who have had thorough training in the principles of mental hygiene and who are an integral part of the educational staff.

In these and other ways, it is to be hoped that the next generation of parents may be enabled to rear a larger proportion of healthy minded children.

What Communities Can Do. So far the discussion has been cast in terms of institutions and their community functions. It seems desirable to indicate also what local communities can do immediately to advance the program already outlined.

The first step is to institute psychologic testing in the schools; this is an indispensable minimum which even the poorest community should not neglect. Psychologic testing makes possible differentiation on the basis of possible achievement rather than on that of chronologic age, gives some indication of the handicaps, mental and physical, under

which children are laboring, and prevents the application of unnecessarily severe disciplinary measures which may further accentuate existing difficulties. In taking this minimum step, however, the community has only instituted preliminary diagnosis; children who evidence abnormality or subnormality as a result of such testing have not been properly diagnosed simply when their I.Q. has been determined. All too often diagnosis stops at this point, and grave injustice is done to children who are perhaps handicapped by special speech or motor disability, emotional blocking, or adverse family situation rather than by congenital feeble-mindedness or psychosis. No single test, however valuable, is sufficiently infallible to determine the future destiny of any child; careful clinical diagnosis by psychiatrists, psychologists, psychiatric social workers, and sociologists must complement the preliminary intelligence tests. If sufficient caution is practiced, however, intelligence testing is an extremely valuable preliminary step and should immediately be instituted by every community not now making use of it.

Next, extramural clinical facilities, child guidance clinics, habit clinics, outpatient clinics, should be made available by the establishment of mental hygiene clinics in communities or other suitable units. These clinics can organize the mental health work of local communities and call in traveling psychiatric clinics, outpatient clinics, and similar agencies which the local community, if small, could not itself maintain.

Although state-wide mental hygiene units are perhaps beyond the purview of local communities, they are vitally necessary to effective community effort. Statistical research, the confidential exchange, diagnostic facilities, standard setting activities, and similar aids to community work may all be made available by a vigorous state-wide mental hygiene organization, either publicly or privately supported.

Perhaps the best way for the local community to inform itself of facilities already existing within easy reach is to communicate with the National Committee for Mental Hygiene, which can either make such information available or direct inquiry to the proper sources. The same organization can

usually give good counsel concerning the facilities which any given community should attempt to start. In view of varying conditions existing in different parts of the country and in urban and rural areas, no blanket program is possible. Each program must be adjusted to the specific needs of the community for which it is intended.

Research

The program sketched is designed to carry into practical effect the knowledge we at present possess; a great deal more is known than has been applied in thoroughgoing fashion. Extensive as present knowledge is, however, there is great need for more. Investigations carried out for this study abundantly demonstrate that altogether too little research is being conducted. Although source material was very generously supplied by authorities all over the United States, the gaps that have been discovered seem to indicate that basic research material does not at present exist in necessary volume.

For example, the exact incidence of deviations from mental health in childhood among children in the population at large is unknown. Estimates are better than nothing, and they have been used in this report, but exact figures for the country as a whole would be far better. Extensive and precise morbidity studies have not yet been made and perhaps cannot be for many years to come. Difficulties in constructing uniform classifications of child behavior seem to be the foremost deterrent, although the lack of opportunity to observe and study the behavior of all individuals in representative communities is a close second. The United States Public Health Service has made no such studies but is at present planning to gather morbidity data concerning mental deviations. The life insurance companies have no figures for the insured. The Committee on the Cost of Medical Care admits that its figures on the incidence of mental ill health are extremely limited in scope. There are, to be sure, certain studies of incidence in small or local groups, such as in schools and

in industries, but these should be repeated in other localities and on a much larger scale.

Difficulties of classification have proved the foremost obstacle. The state hospitals alone provide a good working basis, in as much as most of them use the classification sponsored by the National Committee for Mental Hygiene. This, however, is a clinical classification, and does not tabulate behavior according to the viewpoints from which it is now being studied by child guidance clinics. Many outpatient clinics use a combination of this classification with additions peculiar to the particular clinic. Moreover, there are some clinics which use no classification whatever. The tendency toward looser classifications thus evidenced is not necessarily to be deplored, for many of them are apparently reactions against former clinical classifications which signified little concerning prognosis or treatment and in some cases connoted much that has recently been contradicted. In so far as recommendations for the future are concerned, no definite decisions have been arrived at here but there is a general belief that the advisability of extending the National Committee classification to all outpatient clinics should be carefully balanced against the possibility that some system classifying types of behavior rather than clinical entities might be preferable.

The child guidance clinics have yielded the most research material, not only because they embody a program and method for handling behavior problems of childhood which is recommended by the country's foremost psychiatrists as one of the best means for diagnosis, treatment, research, and education of professional groups and the community, but also because the child guidance clinics have the most clearly drawn-up records and the most sharply defined objectives. There is, however, a large amount of statistical material compiled by child guidance clinics which has not been analyzed. So far most of the analyses have consisted of tabulations of such possible factors as age, sex, intelligence level, school grade, economic status, whereabouts of patient, sources of referral, and problems as referred. This is the

crudest kind of statistical work, and when not taken in conjunction with cultural factors and local conditions in general, it is likely to result in misleading interpretations even if refined to the stage of correlation. If the data is to be genuinely comparable much more intensive work must be done. This insistence upon the need for research in the incidence of mental health is not peculiar to the committee alone. Evidence from numerous outside sources indicates that statistics in the field of mental hygiene are far from satisfactory. Green, for example, testifies to this in her survey of twenty-five outpatient psychiatric clinics in New York City; Davis and Jarrett in their survey of sixty-seven mental clinics in New York City express themselves in similar vein; Stevenson states that the accumulation of fact in the field of child guidance has been scanty and makes a vigorous plea for research; and the Joint Committee in Chicago dealing with registration of social statistics advocates permanent groups to assemble data from the various clinics of the United States, as does also the Committee on Statistics of this Subcommittee.

This detailed discussion of deficiencies in incidence data might easily be paralleled in other fields of research. For example, what are the causes of the adolescent breakdown known as dementia praecox? What types of therapeutic prevention and constructive prevention will in the future lower the present amazingly high incidence of this maladjustment and its distressing sequelae? What remedial measures will change the proportion of dementia praecox in the institutional population from more than 70 per cent to a much lower figure? What are the dynamics of its onset, course and outcome? Again, witness the fact that we do not know enough about the exact relation of organic and functional disorders, nor do we know enough about the influences which determine personality, behavior pattern and so forth. If space permitted, a lengthy series of vitally important problems for research might be listed, each one demanding early solution if mental hygiene is to attain its maximum usefulness in everyday life. Extension of census surveys, agencies privately and publicly financed, national promotional bodies,

ready cooperation on the part of community agencies, and an informed public opinion are all necessary if research designed to promote mental health is to be advanced.

Another vital need closely akin to that for research is the systematization of knowledge relating to mental health problems. At the present time it is extremely difficult for medical students, physicians, nurses, and others to acquire any insight into these problems because of the chaotic condition of the field. The terminology is confusing and conflicting, wordy battles are continually being fought over mere verbal quibbles, no up-to-date and authoritative textbooks of an advanced nature are available, and divisions into schools of theory and practice introduce altogether too much personal acerbity into scientific discussion. New knowledge is badly needed, but if monographic studies are not placed in their proper relation to the whole body of existing knowledge, the benefit that might be derived from them will be largely lost. The work of coordination and integration is perhaps as important as that of extending the frontiers of thought.

The stimulus to research must come from a variety of sources. State bureaus afford only one source; second and even more important are the medical schools and the hospitals with which such schools are affiliated; the importance of the psychopathic hospital has already been noted. A third source is the public school system which, in conjunction with preliminary and clinical diagnostic facilities, may greatly advance our knowledge of maladjustments in their very earliest stages. It is these early stages of mental ill health which are most important from the standpoint of therapeutic and constructive prevention and which should receive most attention. In general it may be said that state controlled research has not been the most fruitful in worthwhile results. Private agencies supported by private funds are at the present time in the advance guard of investigation as well as of treatment, and promise much for the future. We have not yet arrived at the stage when research under state control can wholly or even chiefly take the place of private experimentation, and

it is extremely doubtful whether we shall ever be able to dispense with the freedom of action and risk-taking capacity of privately instituted and financed projects. In fact, it may be said that the possibilities of private research have just begun to develop; until the past decade none of the great foundations placed appreciable sums at the disposal of mental hygiene workers, but within the period named large sums have been granted and development of new and valuable agencies furthering mental health has been phenomenal. If continued and increased support is given, advances comparable to those in the public health field may indubitably be expected.

CLOSING CONSIDERATIONS

At this point it is well to reemphasize the positive meaning of mental health. Throughout the present report attention has been focussed upon the proximate goal, but the ultimate goal, the development of the best possible type of personality, has been left in the background. We have been discussing the healthy mind almost entirely from the negative point of view, that is, as a mind which presents no definite symptoms of the sort ordinarily associated with one of the recognized mental disorders. Such concentration of effort is necessary because the presence of vast and pressing problems calls for the development of programs primarily designed along negative lines. At the same time the whole report would present a warped and distorted picture of the promise of mental hygiene if it were to close without pointing out once more that mental health is not merely the absence of ill health nor mere efficiency and contentment, but that it "implies a degree of well-being in which the person is not preoccupied with unsatisfied tensions, does not manifest gross forms of socially inadequate or objectionable behavior, and maintains himself intellectually and emotionally in all environments and situations that do not bring about crises too intense or frequent to be beyond the adjustive power of human beings and that are not so rigid or overauthoritative that personality is inevitably warped." Successful adaptation

to life implies a successful and well adapted social order and positive mental health is but the personal aspect of a society in which personal and social values are in right relation to each other and are attainable by everyone within the limits of his inborn capacities. The ultimate goal is a social order in which mental and social harmony is not only desirable but possible for all human beings, children or adults, male or female, without distinction of race, color, or creed.

PROBLEMS OF MENTAL DEFICIENCY

ACKNOWLEDGMENT

This report is based upon a series of papers written by the members of the Subcommittee on Problems of Mental Deficiency, upon the returns of questionnaires sent out by the Subcommittee and upon data available in published form. The research and editorial work in connection with the report was in the hands of Howard Becker of Smith College, Northampton, Massachusetts, working in cooperation with Emil Frankel, *Research Secretary* of the Committee on The Physically and Mentally Handicapped.

PROBLEMS OF MENTAL DEFICIENCY

INTRODUCTION

WHEN the Subcommittee on the Problems of Mental Deficiency took up its work in November, 1929, it felt that it should give consideration not only to the problems of the feeble-minded child, but also to the large number of children who were of borderline intelligence and have variously been designated as mentally subnormal, mentally retarded or backward. The committee desired to do this not only because of the allied nature of the problems of the latter group to those of the feeble-minded, but also because the children of borderline intelligence would not be encompassed in the reports of other committees of the White House Conference.

A review of the professional literature showed that *mental deficiency* has been widely used as synonymous with feeble-mindedness. In legal practice, also, *mental deficiency* has been used to mean *feeble-mindedness*. However, some authorities have used the term to include not only the actually feeble-minded but also the mentally retarded of borderline intelligence. The extensive use of mental tests and the intelligence quotient has recently prompted the more widespread use of the term *mental deficiency* in this extensive meaning, that is, to include children of a given degree of intelligence whether technically feeble-minded or not.

In trying to reach a decision, the committee decided to follow this more inclusive and more recent use of the term *mental deficiency* and decided to base its report on the larger meaning of the term.

The American Association for the Study of the Feeble-minded tentatively accepted the term a year ago, but at its

last meeting (1932) the matter was again referred to the committee on nomenclature.

Because of the existing divergence in accepting the term *mental deficiency* to include the feeble-minded as well as the intellectually subnormal, the term *mental deficiency* therefore is used purely tentatively in this report and its future use is subject to such modifications as may be determined upon by authoritative bodies in the field and the practices growing out of actual experience.

SCOPE OF PROBLEM

The Subcommittee concluded early in its deliberations that, as part of the larger Committee on the Physically and Mentally Handicapped, its scope unavoidably extends beyond the limits within which certain interpretations of the term *mental deficiency* would compel it to remain, particularly those interpretations which regard mental deficiency as synonymous with feeble-mindedness. As defined by generally accepted authorities, feeble-mindedness carries a connotation of social inadequacy in addition to the psychometric criterion of subnormal intellect. For example, the British Royal Commission defined the group whom we term the *feeble-minded* as "persons who are capable of earning a living under favorable circumstances, but are incapable from mental defects existing from birth or from an early age (a) of competing on equal terms with their normal fellows; or (b) of managing themselves and their affairs with ordinary prudence."

If the investigations of the Subcommittee were limited to this group the result would be that only the obvious and severe degrees of mental handicap would receive attention. To be sure, a substantial percentage of the population undoubtedly falls in the feeble-minded class; some writers place it as high as 2 per cent although a somewhat lower figure is probably a safer estimate. The group of the severely handicapped is much smaller, however, than that made up of the slightly handicapped; fully 15 per cent of the total popula-

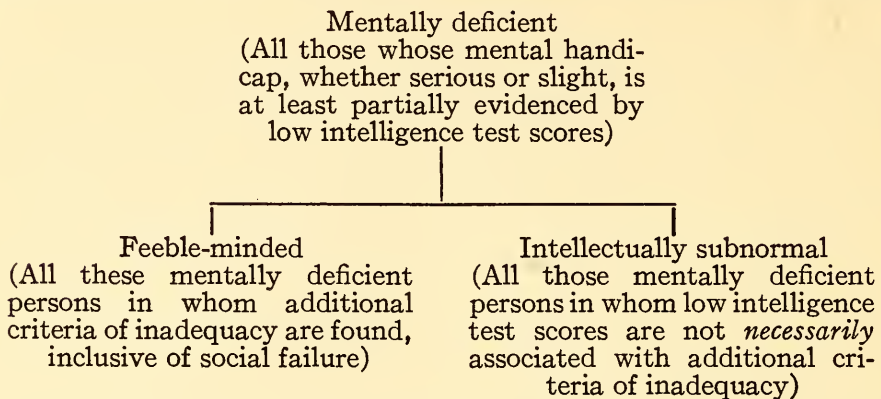
tion falls within the range of low intelligence in which the feeble-minded are included, that is, below the psychometric level equivalent to only twelve years mental age in the adult.* Yet we know that so large a proportion as 15 per cent of the total population cannot be placed in the feeble-minded class! How may this seeming paradox be explained?

The source of much of the confusion lies in the use of intelligence tests and social-economic criteria uncontrolled by the refined techniques of clinical psychology and psychiatry. The familiar classification of the feeble-minded in terms of *idiot*, *imbecile*, and *moron*, covers the range of intelligence from zero to an intelligence quotient of 85 (on scale having mental age of fourteen years as its upper limit) or a mental age of twelve years. These terms, however, properly apply to the feeble-minded only, for they all denote something more than mere intellectual subnormality. This "something more" may be marked social inadequacy, endocrine malfunctioning, psychotic or neurotic complications, and so forth. The fact that the feeble-minded rarely exceed a mental age of twelve years is only one of many clinical criteria determining the diagnosis of feeble-mindedness.

As we have already seen, the percentage of persons in the total population *identifiable* as feeble-minded (that is, in whom an intelligence quotient of 85 or less is found in conjunction with social failure) certainly does not exceed and indeed is probably less than 2 per cent. A considerable proportion of this identifiable group (about one per cent) is made up of idiots and imbeciles, who fall within the range below 60 I.Q. leaving at most but one per cent of identifiable morons. It is obvious, therefore, that at least 13 per cent and

* This level is variously stated in terms of intelligence quotient, I.Q.; scales based upon an upper developmental limit of sixteen years state it as 75 I.Q.; those having an upper limit of fourteen years state it as 85 + I.Q. In either case, the mental age, twelve years, is identical. At present some states use the fourteen year upper limit, but many states, for example, Massachusetts, use the sixteen year upper limit. I.Q.'s throughout this report are on a fourteen year basis, but may easily be changed if so desired; the 60 to 85 I.Q. limits to which reference is most frequently made are *approximately* 50 to 75 I.Q. on the sixteen year basis, all Stanford-Binet.

probably more of the total population measures between 60 and 85 I.Q. without manifesting definitely feeble-minded characteristics.* This may be schematically stated as follows:



The common element in all these cases is that of mental handicap, whether this be serious or slight. The intellectually subnormal, although not feeble-minded, are undoubtedly in the mentally handicapped class, and as a consequence this Subcommittee has decided that they must be included in the total problem.

The proposed program, therefore, includes all mental deficiency, and not feeble-mindedness alone. The handicaps associated with (1) simple intellectual subnormality must receive due attention as well as the more serious handicaps arising from (2) intellectual subnormality *plus* other factors, organic and/or functional, which produce those deviations noted in many definitions of feeble-mindedness and in clinical research. In this general statement of the scope of the problem the Subcommittee as a whole concurs.

POINTS OF AGREEMENT

Despite certain differences of opinion between those holding the view of biological determinism and those holding the view of biosocial determinism,† full agreement was reached on the following important points:

* Incidence data are discussed in more detail in the Appendix of this report.

† Biological and biosocial determinism are discussed in more detail in the Appendix of this report.

Intelligence tests should not be used as the sole means of identifying high-grade feeble-mindedness or intellectual subnormality

Careful clinical methods should be used in diagnosis

The use of the term *moron* to denote those persons between 60 and 85 I.Q. in whom nothing more than simple intellectual subnormality has been demonstrated should be discontinued. To take its place, *intellectual subnormal* or some term of similar implications is suggested

The term *borderline* should neither denote nor connote definite feeble-mindedness as above defined, but should have the meaning of "doubtful" only

Only a fraction, about 1/13, of those within the 60 to 85 I.Q. range have been demonstrated to be *feeble-minded* as that term is used in the standard definitions

Favorable situational conditions play some part in preventing *marked* social failure of the mentally deficient even when unfavorable constitutional criteria are present.

With these points of agreement as a working basis a practical program with but few mutually exclusive qualifications introduced by theoretical differences has been agreed upon. The chief general distinctions issuing from the division of opinion lie in the separate consideration of *intellectual subnormality* on the one hand and *feeble-mindedness* on the other. Wherever possible the two terms will be merged in the inclusive concept of mental deficiency.

DEFINITIVE CLASSIFICATIONS AND DESCRIPTIONS

Classifications and descriptions are here presented in the hope of further clarifying the use of terms.

Feeble-minded Children

Feeble-minded children are those so seriously retarded in development of intelligence or so defective in judgment—

from whatever reason—that at maturity they are incapable of successful personal-social adjustment without special assistance or supervision. They are usually subdivided according to degree into four grades.

Idiot Grade. This degree of feeble-mindedness includes those children who are insensible to danger, are incapable of attending to their ordinary physical needs, and require constant care and attention. The upper limit of their mental development is less than three years.

Imbecile Grade. This includes children who can attend to their own physical needs and under training can learn to perform simple occupational tasks, but who, even at maturity, require supervision because they are incapable of independent adjustment except under the most favorable conditions. Their relative intelligence is below 60 I.Q.; their mental age is below eight years.

Moron Grade. It is concerning this group that differences of opinion are most marked. It includes several overlapping subgroups. Among these are: children who under special instruction may learn to read and write to some extent but who profit little from ordinary academic work beyond the fourth and fifth grades; children who eventually learn to perform relatively simple unskilled tasks with occasional oversight and who are often capable of earning a living under favorable conditions or under supervision, but who are incapable of progressing industrially beyond the common labor or apprentice levels in simple vocations; children who often succeed in acquiring some advantageous social habits but who are usually incapable of successful unassisted adjustment to changing social or industrial conditions because they lack what is popularly termed good judgment, common sense, and planning capacity, or because they fail to display sufficient resourcefulness, reasoning, initiative, energy, and insight to meet social requirements in their particular communities. At maturity these morons have mental ages between eight and twelve years; in the majority of cases their ages are below eleven years, although a small proportion attain

Stanford-Binet scores of twelve or thirteen and in rare instances even fourteen years. Early detection by intelligence tests alone is difficult if not impossible because the arrest in mental development may be gradual or sudden and because they are easily confused with other mentally deficient types. Aside from his inability to profit materially from both academic and manual or industrial education, the most distinguishing characteristic of the moron is his permanent need for some supervision in his adjustments and his lack of energy and resourcefulness in making these adjustments even when under more or less constant stimulation.

Morons are trainable rather than educable, but may be trained under public school conditions when instruction is adapted to their particular limitations and needs. When such training has enabled them to earn a living by occupational skill or industry and when their conduct is not antisocial, morons often are capable of successful adjustment in the community if the necessary supervision can be provided. If for any reason it cannot, the welfare of both community and individual is better served by institutional commitment.

Borderline (Doubtful) Feeble-minded. It is clinically possible and often necessary or desirable to differentiate four types of cases which present problems of borderline diagnosis: (1) those children in whom the complete picture of feeble-mindedness is not yet present due to early age; (2) those whose level of intelligence is so high that it approximates average normal limits, but who on the basis of other clinical criteria may be classified as feeble-minded; (3) those who show a combination of the clinical elements of both high-grade feeble-mindedness and low-grade normality; (4) those cases of delayed development where retardation may subsequently be outgrown by continued growth beyond the limits of ordinary expectation.

Intellectually Subnormal or Retarded Children

Many intellectually retarded or subnormal children with special disability or behavior difficulties become socially or

personally maladjusted. Their low intelligence associated with mental, physical, or social handicaps causes them to be easily confused with the feeble-minded. Such children have sometimes been termed *pseudo-feeble-minded*. The important distinction is that in verbal, social, and educational conditions these children have a much greater potentiality of personal social success at maturity than is the case with the feeble-minded. Some of the groupings in which they may be placed are given.

Unadjusted or Maladjusted. In this group intellectual subnormality is associated with ineffectual behavior, behavior disturbance not sufficiently serious to evoke social judgments of personal-social inadequacy, but in which retardation or intellectual subnormality is associated with mental instability, personality defect, psychopathic tendencies, and similar deviations. These children require instruction in special classes in public schools, such as adjustment classes, particular classes, or predelinquent classes, where specialized instruction helps to overcome special disability of behavior in spite of the low intelligence level.

Special Mental Disability. Here retardation or intellectual subnormality is associated with some peculiar mental disability, often basically physical or situational, in attention, memory, perception, or language. Such children require instruction in differential teaching or coaching classes designed to meet their particular needs.

Special Educational Disabilities. This group includes those children whose intellectual handicaps are associated with the environmental conditions at home or at school such as illness, pupil-teacher antagonism, bad study habits, as contrasted with the constitutional handicap of the preceding group. Individual instruction (restoration classes) helps such children regain their appropriate educational levels. Mental hygiene may also be of much assistance. Visiting teachers, recreation programs and similar aids should not be overlooked.

SOCIAL CONTROL CLASSIFICATION OF FEEBLE-MINDEDNESS

In addition to the above definitive classification it seems desirable to group the feeble-minded in categories determined by the practical necessities of their care and control. Some will have to spend their days in institutions; others after suitable habit training may be placed in farm or industrial colonies or even returned to the community. Groupings which take account of these possibilities are: low-grades; unadjusted high-grades; physically handicapped high-grades; well adjusted young high-grades; well adjusted older high-grades; aged high-grades; clinical types; psychiatric types.

Low-grades. This group includes idiots and low-grade imbeciles of both sexes and any age who must always be assisted in the simplest matters, that is, in feeding, dressing, and so forth. If proper home care cannot be given or if it is judged inadvisable for any reason permanent institutional care is indicated.

Unadjusted High-grades. This class includes high-grade imbeciles and morons of either sex and any age—chronological children are most numerous—who cannot or do not learn to conform to minimum conduct standards of the community. When permanent correction of the behavior disorder cannot be accomplished by family or community, they should be committed to institutions, and the institutions should make every effort to admit them even if less serious cases are thereby crowded out, for members of the unadjusted group may constitute an active menace if permitted to remain at large in the community. After institutional training over a period of years, however, some may be returned to the community temporarily or even permanently. In either case the possible desirability of sterilization before release should be considered.

Physically Handicapped High-grades. This group includes persons of either sex and any age who might succeed in adjusting themselves to community life if it were not for some physical handicap which in conjunction with feeble-

mindfulness constitutes a total problem sufficiently grave to be beyond facilities for treatment in the home or in the community. Consequently institutional provision should be made for these cases.

Well Adjusted Young High-grades. In this category may be placed those imbeciles and morons of both sexes who offer some prospect of adequate social adaptation after training. When suitable home conditions can be provided, such cases, after training, frequently can be cared for outside the institution. Training, however, is necessary, and since it is usually difficult to provide the specialized training indispensable for ultimate adjustment, communities, which are handicapped in this respect, should be given institutional preference. Sparsely settled rural districts, for example, are not likely to have the resources necessary for special classes. Probably the majority of the well adjusted young high-grades who have been given institutional training can be safely paroled at maturity, although it may perhaps be necessary permanently to prevent reproduction.

Well Adjusted Older High-grades. The sole difference between this group and the well adjusted young high-grades is increased age. When such persons have not already received special class training it should be made available in institutions. When for any reason, however, institutional commitment is not possible or desirable, well adjusted older high-grades should be registered with state and community agencies and supervised to prevent the development of difficulties necessitating institutional care. Such prevention is extremely important, for most, if not all, of our institutions, are already overcrowded. Community supervision is not only a substitute for, but, under proper conditions, may be more desirable than institutional treatment.

Aged High-grades. This group includes the comparatively senile or industrially incapacitated of both sexes above forty-five years of age or thereabouts. Many will be dependent upon the community for support, but in view of the overcrowded nature of institutions commitment or recommitment is inadvisable. They should be cared for in the com-

munity home for the aged instead, although it may be necessary to group them separately. It may seem anomalous to mention such cases in the present context, but the feeble-minded are children mentally no matter what their chronological age.

Clinical Types. This group is composed of the more or less remedial clinical varieties not included among the helpless low-grades and physically handicapped feeble-minded. This group therefore contains orthopedic complications with feeble-mindedness, endocrine types, remediable birth injury associated with deficiency and perhaps degenerative conditions, such as congenital syphilis, epidemic encephalitis and the like. Only a few of these can be properly cared for in their own homes. Those who cannot should receive institutional hospitalization, treatment, and training. Those in whom sufficient improvement is manifest may be returned to their homes temporarily or permanently; the unimproved should, if possible, be permitted to remain in institutions.

Psychiatric Types. This class includes epileptic, psychopathic, and other types of feeble-mindedness complicated by mental disorders. Persons thus afflicted usually cannot adjust in the community, and in as much as highly individualized treatment is impossible in most mental hospitals or institutions for the feeble-minded, they are best cared for in institutions especially designed for their needs. After specialized treatment it is perhaps possible to return them to the community or to transfer them to an institution for the strictly feeble-minded.

SIGNIFICANCE OF SOCIAL CONTROL CLASSIFICATION

The full significance of this social control classification of feeble-mindedness will not become apparent until community responsibility and practical program are discussed. The fact that the feeble-minded differ vastly among themselves and the further fact that institutional commitment frequently is neither possible nor desirable have a great many implications that cannot be dwelt upon here.

Since there is no realization of the necessity for social control no social control classification of the intellectually subnormal has been given. Most of the intellectually subnormal are fairly well adjusted, and as the grosser physiognomic and anthropometric deviations are seldom in evidence among them, most laymen are quite unaware of their existence. Only in those communities where differentiated classes such as the so-called Z classes have been instituted is there anything remotely approaching a basis for a social control classification. The lack of such a basis should not, however, lead to the conclusion that it is impossible or unnecessary; once attention has been called to the needs of this numerous group we may expect greater efforts to obviate their handicaps by specialized training than are now being made.

CLINICAL CLASSIFICATION OF FEEBLE-MINDEDNESS

Clinical classification of the feeble-minded is largely in terms of behavior. A further classification cast in terms of clinical findings that reveal causes or predisposing factors which mere behavior analysis cannot reach, is also needed. Clinical classifications are especially valuable in that they can be used to isolate problems for research and intensive investigation. Primary and secondary feeble-mindedness are the most important of all the clinical divisions, and that in spite of the fact that, at present, the exact proportion of feeble-mindedness due respectively to primary or secondary causes is quite unknown, and the whole field is highly controversial. Probably no clinical classification will find general agreement, but a listing of a few of the subheads under which cases are at present classified may give some indication of the complexity of the problem.

Primary or Constitutional. This is usually defined as a general biological inferiority with evidence of defect, deficiency, or anomalous development in various portions of the mental and physical make-up. Such evidences (not all of which are found in every person thus classified) are in deviations of height and weight, anomalous physiognomic

and other anthropometric traits, endocrine dysfunctions, abnormal personality traits and state of emotional immaturity, and low intelligence test scores. Such criteria are usually quite well marked in the ranges of intelligence below 60 I.Q., but in the upper levels it is sometimes extremely difficult to identify feeble-mindedness by such means. Data on behavior in the community is almost always an indispensable adjunct of clinical diagnosis. Cases in this group are subclassified as: familial; Mongolian; congenital diplegic; microcephalic; oxycephalic; cretinous; hypophysial; hypoplastic; and constitutional syphilitic. These subclassifications are not mutually exclusive; it is often possible to place a given case in two or three categories. Although these terms do not always denote causal factors, and in most cases are purely descriptive, a drawback of most clinical classifications which are rarely if ever sufficiently dynamic, they cannot be ignored. Further, it does not necessarily follow that because a person between 60 and 85 I.Q. can be assigned to one or another of these types that his social failure is inevitable, although it may be highly probable.

Secondary or Reactional. This is usually defined as a state of defect in various portions of the mental and physical make-up which results from the organic reaction of the normally developing organism to mechanical, chemical, or bacterial factors in the environment. Until recently diagnoses in terms of secondary feeble-mindedness were quite popular. In order to avoid the charge of hereditary defect in the family germ plasm, parents and physicians as well grasped at such explanations as difficult birth, blows on the head, and sequelae of scarlet fever. In recent years, however, the emphasis upon primary or constitutional feeble-mindedness has become so strong that the secondary variety has been almost wholly lost to view. Probably the reaction was in part justified, for many diagnoses cast in secondary terms were simply cloaks for ignorance or pride. However, a bias in favor of explanation in primary terms has developed to such an extent that possibilities of secondary alleviation and prevention are being neglected. Some attention must be given to the latter.

Up to date direct trauma has been most carefully studied. Statistical evidence of effects upon the development of the embryo which later appear in the form of serious mental handicap is abundantly available. In addition, maternal histories of malnutrition, of renal disease, and of emotional disturbance are so frequently found among the data of cerebral and spinal disorders in children that there can be little doubt of the part such factors play in the production of feeble-mindedness. Moreover, the embryo itself, although relatively isolated from somatic states in the mother, is nevertheless subject to various forms of disease. Soluble toxic states, for example, may be diffused through the uninjured placenta; a minute focal injury in the placenta may permit vast numbers of microorganisms to gain access to the embryo. Recent research has also shown that syphilis is transmitted directly through the mother (positive Wassermann reaction in apparently healthy mother) and not indirectly through the father. Therefore a syphilitic mother may give birth to children whose mental handicap is attributable to the mother's disease. Congenital tuberculosis is somewhat more common than syphilis, but even though it has occasional etiologic importance is not often related to definite nervous disorders. Again, children born prematurely, especially during the seventh and eighth months, may fall a prey of serious cerebral disorders resulting in secondary feeble-mindedness. Another important cause is adverse conditions during labor. Improper obstetric methods leading to long continued contraction of the skull, dry birth, and careless or unskillful instrumental delivery are probably responsible for many infantile cerebral palsies and even graver disorders. Undue traction upon the arms and legs of the infant during delivery occasionally gives rise to serious mental handicaps. These factors may be roughly classified as infantile cerebral syphilis, posttraumatic, postencephalitic, postmeningitic, hydrocephalic, and so forth.

Degenerative. This classification includes several types of mental defect which cannot be definitely placed in either the primary or the secondary categories, although the gen-

eral opinion is that they are more closely allied to the former than to the latter. Since relatively little can be said of this group a mere listing must suffice: tuberous sclerosis, amaurotic degeneration, spasmophilic deterioration, and Schilder's disease.

In the section on "Research" attention will again be called to the importance of such clinical classifications as the above and their bearing upon problems of prevention and therapy.

SOCIAL IMPORTANCE OF THE PROBLEM

No matter what incidence data or fundamental viewpoints are accepted, the social importance of the problems of feeble-mindedness and intellectual subnormality is apparent. There can be little doubt that the mentally deficient always present a greater risk of social failure than the mentally normal. Many who are thrust into the turmoil of modern life without special preparation and supervision soon represent social and economic tragedies which impose a heavy burden not only on the persons immediately concerned but on the rest of society as well. For example, it is probable that mental deficiency plays a considerable part in extreme poverty and dependency, and is sometimes a contributing factor in delinquency and crime.

Poverty and Dependency

In all probability not more than 2 per cent of the total population are feeble-minded, and although studies of feeble-mindedness among school children yield widely varying percentages, a figure of 8 per cent for those under twenty is an extremely high estimate. In contrast to this, a recent survey of the inmates of homes for dependent children in 16 states shows that over 16 per cent are feeble-minded—more than twice as many as even a very high estimate of the incidence among the school population shows. It is therefore plain that more feeble-minded children are found in the dependent classes than in the general population.

Further evidence is found in the fact that in the county farms and poorhouses of 19 states over 15 per cent of the inmates were feeble-minded and over 30 per cent were below 85 I.Q. In other words, about one-half of the mentally deficient group were feeble-minded and about one-half intellectually subnormal. Here again we have more than twice as many in the dependent group as in the general population, which again points to the positive correlation between dependency and mental deficiency.

An investigation of 84 dependent families in Manhattan showed that more than 25 per cent of their members had I.Q.'s below 85. Of the entire case load of the Charity Organization Society of New York 12 per cent to 15 per cent have been diagnosed as feeble-minded; the addition of undiagnosed but suspected cases, some of which may be intellectually subnormal rather than feeble-minded, would raise the figure to more than 25 per cent. A follow-up study of 117 New York cases which had been under care five years before showed that in the period subsequent to the closing of the cases only 30 per cent had made satisfactory adjustments; 20 per cent were found to be markedly dependent or antisocial. In this same study numerous cases are cited which show how the low intelligence of a mother or a father and consequent lack of cooperation frequently baffled the best efforts of social case workers. In many instances the persons with whom these workers are trying to deal really cannot and should not be cared for outside of institutions.

Delinquency and Crime

Mentally deficient persons are frequently involved in antisocial behavior. A proportion of mentally deficient persons appreciably greater than that usually estimated for the general population is to be found among the inmates of penal correctional institutions. The reasons for this greater proportion are by no means agreed upon, for example, the mentally deficient are more easily led into delinquencies, are more easily caught, and often have inadequate legal defense.

Moreover, the *neglected* mentally deficient are probably more likely to be delinquent or criminal than are those of normal intelligence. It cannot be too strongly emphasized, however, that generalizations regarding the relation of mental deficiency to delinquency and crime must be made with extreme caution. It is obvious that no appreciable amount of delinquency or crime is due primarily or even chiefly to mental deficiency as such. Nevertheless, the latter is often *contributory*; it is, so to speak, the added straw in many cases that end in antisocial behavior. The same is true, although probably in greater degree, of feeble-mindedness as well. It would seem, therefore, that the burden of proof still rests upon those who claim that the mentally deficient are no more likely to be criminal or delinquent than are those of normal mental capacity. This is not to minimize the importance of other factors, but merely to point out the important part in *particular* cases of delinquency and crime sometimes played by mental deficiency.*

POSSIBILITY OF SOCIAL CONTROL

Poverty and dependency, delinquency and crime should not, however, prevent us from seeing the forest for the trees. Although feeble-mindedness and intellectual subnormality are often contributory causes of social maladjustment, we must not infer that all persons included in these groups are socially hopeless. Many of them, particularly the intellectually subnormal, are well adjusted and get along fairly well under circumstances that are not too adverse; they are self-supporting and in their own limited ways lead happy, contented lives. In fact, since the ranks of unskilled labor are largely recruited from this group, it can truthfully be said that many of the intellectually subnormal have a definite and even important function in present-day society.

Despite the different opinions commonly held a decade or two ago, the evidence is overwhelming that a large proportion of the low intelligence group are not social failures.

* Discussed in more detail in the Appendix of this report.

The almost complete lack of suitable training and supervision for all classes of the feeble-minded and intellectually subnormal, especially for the higher levels, until recent years, makes the extent to which social failure has been avoided the more surprising. We know that they need specialized and differentiated training; we have some knowledge of the types of industries and occupations that can be taught successfully to the various groups at the various age levels; and many more persons of low intelligence can be diverted into channels of social usefulness if we act on our present knowledge, incomplete though it undoubtedly is.

In other words, even with the present all too limited provision for their care and training, considerable numbers of the mentally deficient, at least 13 per cent of the total population, manage to get along without serious failure; under a more adequate program of social control many of those who now fail would constitute acceptable members of the social order, and those for whom failure is inevitable, whether for biological or situational reasons, could be recognized and dealt with before they acquire habits of delinquency or become heavy social liabilities in other ways.

COMMUNITY RESPONSIBILITY

Social control does not mean putting laws on the statute books and then forgetting them; community responsibility for the mentally deficient should always be kept in mind. At present there is a regrettable tendency to overlook this responsibility because of the excellent work now being done in some of our institutions, and this leads to neglect of more than 14.9 per cent out of the 15 per cent of the total population who are mentally deficient. (These and the percentages to follow are, of course, *estimates*.) Even if institutionalization of the whole 15 per cent were a desirable solution of the problem, which it obviously is not, it would be a practically impossible solution, for there is available institutional space for less than .1 per cent of the total population, and it is all in use. A far more serious objection is raised by the assertion

of competent authorities that institutional treatment is advisable for not more than .5 per cent, leaving 14.5 per cent of the total population who, although mentally deficient, must be trained and otherwise prepared for absolute or relative self-directing existence in the community.

The net effect of these considerations is that the social control of 14.5 per cent of the 15 per cent of the total population who are mentally deficient is the eventual responsibility of the community rather than of custodial institutions. Of the remaining .5 per cent, moreover, it is quite possible that some of them may be returned to the community after a suitable habit-training program. If local responsibility for this 14.5 per cent or more is evaded, a heavy toll in poverty, dependency, lowered or unrealized efficiency, unsatisfactory social participation, and assessments is exacted, to say nothing of the human suffering entailed.

The state must of course provide suitable legislation, uniform standards, a strong central bureau and competent direction, but if any program for the social control of the mentally deficient is to be practical the local community, whether town, county, or city, must take more responsibility than, in most if not all instances, it now does.

PRACTICAL PROGRAM

The extensive experience necessary to support any recommendations for a practical program does not exist in sufficient degree, especially in so far as those parts designed for the intellectually subnormal are concerned. In as much as their social inadequacy, however caused, brings them irresistibly to public attention practically everything done in this, or any other country so far has been for the feeble-minded. But the handicap of simple intellectual subnormality is certainly serious enough to warrant suggestions looking toward special treatment for its mitigation, even though the social liabilities to which it gives rise are less obvious than those of feeble-mindedness; even though any program for dealing with intellectual subnormality will necessarily overlap certain sec-

tions of any program for dealing with feeble-mindedness, and even though experience in dealing with the former is scanty when compared with the latter.

The practical program for dealing with mental deficiency may be divided into *three main stages*, all of which are absolutely indispensable: (1) diagnosis, with concomitant registration if social policy makes such registration advisable; (2) treatment, comprising training and education in social self-direction for all those who can so be dealt with either in the community or in institutions, as well as segregation for those incapable of a modicum of social self-direction who therefore cannot or should not be returned to the community; (3) guidance, supervision, and other aid for those kept in or returned to the community because judged likely to be socially adequate if properly guided in the choice of vocation and supervised when necessary, or because even though not able to care for themselves, supervised home care is available and desirable.

Speaking in less specific terms, the A B C of a practical program for the mentally deficient is diagnosis, treatment, supervision.

There is a fundamental bisection, sometimes explicit but usually implicit, in each of these stages, due to the fact that the feeble-minded and the intellectually subnormal cannot be sharply separated except in the clinic, and, according to one opinion, not even there if situational factors are not given prominence, yet they must in some places be treated separately for practical as well as theoretical reasons. However, in many parts of the country separate provision is often impracticable or impossible at present. Hence undue practical importance should not be attached to the bisection except where such importance is specifically stressed.

Diagnosis

Adequate information, both numerical and descriptive, concerning all the feeble-minded and intellectually subnormal children in the country must be collected and kept available

by means of preliminary diagnosis, clinical diagnosis, and registration.

Preliminary

It has been customary to use the term *detection* to denote this stage in the process of dealing with the feeble-minded and intellectually subnormal, but it carries with it too many connotations of criminality, social menace, and eugenic evangelism to make it acceptable. *Preliminary diagnosis* seems preferable because diagnosis carries with it the suggestion of treatment and possible amelioration, which detection does not. *Preliminary* also indicates that the feeble-minded and the intellectually subnormal cannot be diagnosed at one fell swoop, but must be observed over a sufficient period of time. A number of agencies are now in existence through which the task of preliminary diagnosis can be carried out.

Public and Private Schools. With the exception of those who come into this country after the school age is passed the schools make contact with practically all of the mentally deficient above 60 I.Q. as well as a few of imbecile grade. Hence in all probability over 80 per cent of all existing cases enter the schools; the majority of these, however, are not usually recognized as mentally deficient.

This lack of recognition is shown by the relatively small numbers included in special classes. In the less populous regions, differentiated classes for the mentally deficient are almost non-existent. In a few instances the schools provide specialized departments for determining the mental status of the children attending, but in the great majority of cases the school physician or the teacher who has taken a course in mental testing has sole charge of the educational destiny of the child. Decisions that are fraught with the gravest social and personal consequences are made by individuals without adequate training. Every child, now in or subsequently entering the public schools, should be given a psychologic examination, but such an examination should only be a preliminary means of diagnosis; it should never

be the sole guide. Children manifesting intelligence markedly above or below the average should be further studied by clinical methods and every effort should be made to meet their special needs.

Social Welfare Agencies. The mentally deficient frequently evidence greater failure outside the school than in it, and consequently come in contact with social welfare agencies. Obviously such agencies are not equipped to make exhaustive studies of the feeble-minded and intellectually subnormal with whom they come in contact; more definite diagnoses must be left to more specialized staffs. Tentative recognition by social agencies can be of great value if as a consequence use of clinical diagnostic facilities is made.

Juvenile and Other Courts. In states where commitment to institutions is through court procedure, special examiners are often provided to determine the mental status of cases coming up for consideration. The function of such examiners should be merely that of deciding whether or not mental deficiency is present; when it is, the case should be relayed to the proper clinic for diagnosis and in some instances, recommendations. In a few states, juvenile and other courts have special provision for the mental examination of cases in which mental deficiency is suspected; the same comments as those made concerning courts in general apply here.

General Practitioners. Physicians make a great many contacts with the feeble-minded and intellectually subnormal, but for various reasons they bring relatively few cases to the attention of the authorities. The physician should not take the task of final diagnosis upon himself, but should merely route cases coming to his attention through the proper channels.

The Home. The number of feeble-minded and intellectually subnormal children recognized in the home can be gauged to some extent by the number for whom relatives seek voluntary commitment; this constitutes a very considerable proportion, over one-half, of all committed cases. In addition, relatives frequently recognize the handicaps of mentally deficient children and seek to train and protect

them in such a way that commitment will not be necessary. When cases are not too serious, when home conditions are suitable, and when some instruction and supervision can be given, this may be a desirable means of easing the pressure on overcrowded institutions.

Needed Agencies. All these means of preliminary diagnosis are highly useful; none of them should be decried. There is need, however, of some sort of finding agency which will take the initiative in diagnosing mentally deficient children before they become personal, family and community problems. The schools could function quite well in this capacity were it not for the fact that often by the time school age is reached mentally deficient children have acquired a great many undesirable habits. Preliminary diagnosis at the age of four or even earlier would be far better. Whether or not the school can extend its functions into the preschool period is a moot question; at any rate, preschool diagnosis should not be left in the hands of private agencies as is now quite generally the case. In some states traveling clinics now carry on the diagnostic work in many communities which cannot afford local agencies. Rural districts in particular, which often have a greater proportion of feeble-minded than urban centers, make good use of them although in some cases the good is the enemy of the best.

Clinical

After the preliminary diagnosis of low intelligence, less than 85 I.Q. or thereabouts, has been obtained, there should be a thorough examination in a clinic with a staff large enough to give all the examinations necessary for a diagnosis upon which treatment can unhesitatingly be based. The data necessary for such a clinical diagnosis are: the results of intelligence tests; tests to determine abnormalities in emotional reaction, temperament, and habits; medical physical examination, primarily with relation to mental deficiency, but also giving some attention to the physical condition of the whole child; a detailed study of the child's personal history,

including home record, school record, conduct and delinquency record, and occupational record, if any; a very careful analysis of the family history and situation, not omitting situation in the community.

Since children do not present such a picture of social inadequacy as do adults, the task of differentiating between the various types of mental deficiency is by no means easy, and extreme care in examination is necessary. Frequently what appears to be congenital feeble-mindedness is due to emotional blocking, malnutrition, bad home situation, physical defect, and so forth. In order to make sure of adequate diagnosis, it is often if not always advisable to make use of the threefold staff of the child guidance clinic composed of psychiatrists, psychologists, and psychiatric social workers or sociologists which alone can deal with the child as he should be dealt with, that is, as a total personality involved with, reacting to, and influencing a total situation. Certain it is that partial examinations should not be relied upon when the whole educational and indeed social future of the child is to be determined.

It may be objected that adequate diagnostic facilities are costly, but when the direct and indirect costs of present half-way measures are reckoned, it will be seen that the best is cheapest in the long run.

Registration

A complete record of every feeble-minded person within the state should be kept in order that data may be available for social agencies, school authorities, courts, psychiatrists, and other accredited individuals or organizations. Besides service rendered in individual cases, the existence of accurate and detailed material for analysis would make possible more intelligent programs for dealing with the problems of mental deficiency.

At present there is considerable doubt as to the advisability and feasibility of registering, in addition to the definitely feeble-minded, the larger numbers of intellectually

subnormal persons who may never be the source of any serious personal or social problem. Registration of all the intellectually subnormal in the United States would involve no less than 13,000,000 persons. Obviously public opinion on social policy would not at present sanction the expenditure thereby made necessary. As a matter of fact it is not at all certain that such expenditure could be justified. Until sufficient institutional space has been provided to care for the more serious cases of feeble-mindedness and for the training and education, in special and differentiated classes, of all the mentally deficient, there seems little use in erecting the complicated bureaucratic machine necessary for complete registration. The immediate task seems to be registration of all the definitely feeble-minded.

Even this immediate task is far from accomplishment. On January 1, 1930, only 7 states had established central registration for the feeble-minded. The total number registered was only 70,000. Moreover, the data gathered are not comparable, for methods of assembling information vary from state to state and no state makes use of all the possible sources of information.

The consensus of opinion is that a central registry for the feeble-minded should be located in the central state department which has control over the state institutions for the mentally deficient and the state mental hospitals.

Sources of Information. *Reports from clinics* having charge of the examination of all school children are perhaps first in importance as sources. Some of these will necessarily be traveling clinics, and these have some drawbacks, notably the lack of opportunity and personnel for collecting personal and social histories. Where no other sources of information are available, traveling clinics are perhaps to be preferred to less adequately staffed agencies, but there is little or no excuse for depending upon traveling clinics in cities of 100,000 population or even less; wherever permanent and adequate facilities can be established they should be given the preference.

Reports from special and differentiated classes can often contribute valuable information in lieu of, or complementary to, reports based upon clinical diagnosis.

Outpatient departments of mental hospitals can often submit valuable reports because cases presenting combinations of mental disease with mental deficiency offer special difficulties in classification and treatment.

Reports from outpatient departments of state institutions for the feeble-minded would place in the record many cases which because of overcrowding or for other reasons could not be admitted, but which may later become so serious that commitment cannot be avoided.

Habit clinics dealing with the preschool child, child guidance clinics, and other mental clinics are important because of the early age at which they can discover mental deficiency and because the special problems with which they deal are often complicated by low intelligence.

Data on admissions of young persons afflicted with mental deficiency, with or without psychosis, to mental hospitals may also be of much value to registration agencies. This is also true of reports of admissions to state institutions or schools for the feeble-minded.

Admissions to correctional institutions are especially important, inasmuch as a fairly large proportion of admissions to these institutions is classed as feeble-minded or intellectually subnormal; further, this group represents a selection of those mentally deficient persons presenting more serious conduct disturbances.

Juvenile courts frequently have cases of mental deficiency that are extremely important to a central registry. For example, the psychiatric examination of juvenile offenders often yields information relative to the association between mental deficiency and misdemeanors of various types.

Social welfare agencies of various descriptions have case records from which data of great value for a central registration bureau may be gleaned.

County health units have access to information in reference to the general population which frequently is not avail-

able to any other agency and which any central registry should take into account.

Children's hospitals and neurologic departments of general hospitals occasionally refer cases of obvious mental deficiency to other agencies and hence constitute a possible source of information for a central state bureau.

Suitable records assembled from these sources and uniform for each state, at least, should be kept available in the registration bureau. The confidential exchange maintained by many welfare federations furnishes a convenient example of what is meant. Only authorized persons or agencies should have access to such records. When the confidential nature of the exchange is brought to public attention the usual reluctance to furnish information will to some extent be obviated.

Treatment

The chief means of treatment are special classes for the feeble-minded, differentiated education for the intellectually subnormal, institutional care and training, and colonization and parole.

Special Classes, Differentiated Education. It is to be hoped that before many years the public school, through special classes and other pedagogic provisions, will be so organized to deal with mentally deficient children that it will be the largest and most important single agency in developing them for economic and social usefulness and in preventing social failure. Indeed, it already fills such a place, in some states, and if the following points were always observed, would fill it in many more:

Special class work with teachers specially trained, particularly in hand work, should be provided for a relatively large group

Visiting teachers, nurses, educational counselors, and so forth, should have a thorough understanding of the problems of feeble-mindedness.

Parents of feeble-minded children should be advised by

the visiting or special teacher. This is, in many cases, a difficult task requiring great tact

The curriculum should be eminently practical with the emphasis on the manual, although academic work should be given according to the child's capacity—fourth or fifth grade level is usually the limit. At suitable intervals there should be a program of thorough reexamination to determine the child's progress

Adequate follow-up work and vocational guidance should be instituted

Diversification should be practiced wherever possible, even the higher-grade feeble-minded vary widely among themselves, and full recognition should be given this fact in the organization of special classes

Children with special disabilities should not be dealt with in the same way as the others

It has been suggested that, in addition to the strictly special class work, regular classes should be differentiated, that is, they should make provision for ability grouping with correspondingly modified curricula

Manual training should be substituted for certain forms of academic work; in this way such classes (sometimes called Z classes) could well receive intellectually subnormal children who might otherwise be placed in special classes for the feeble-minded, and many other children who do not receive much lasting benefit from the strictly academic subjects.

The present curricula are fetishes, not suited to modern life. From the elementary grades through the college, they are too academic. Inadequate even for average children, they are disastrous for the mentally deficient. The social prestige attaching to traditional types of education makes it very difficult to persuade parents of these children to accept something just as good, the more so because the attitudes of many teachers buttress the prestige of educational tradition.

In order to train mentally deficient children, we must not only modify curricula, but we must also prove to those parentally and financially responsible for them that the modified education is not merely just as good but is infinitely better because it really does educate, that is, it prepares for successful living.

Up to date only a few changes in curricula have been made to meet more adequately the needs of mentally handicapped children. Although vocational courses have been introduced, either in specialized schools or as adjuncts of junior high schools, there has been no clear cut policy of selection, and this, together with the stigma attaching to non-academic courses, has rendered most of the courses far less effective than they might be.

Changes should be far more thoroughgoing. Teachers in the elementary schools should prepare their intellectually subnormal and dull pupils for the industrial courses in the high schools. While at this time a detailed program is not feasible the curriculum must be changed to meet the needs of the large group of children who are not profiting by the present academic curriculum. By planning a course in the manual activities with related academic work so organized that pupils will be promoted on the basis of achievement, they will be in the junior or senior high school at the proper age, accomplishing something worthwhile, and not humiliated because they are not in the college preparatory courses.

Unfortunately at present the average public school extends its differentiated provisions, when it has any, to 2 per cent of the school population at most, and then usually in the form of special classes for those who may be labeled as a typical or markedly retarded, generally feeble-minded, from whatever cause. The large group who are intellectually unable to derive maximum benefit from the regular curriculum, and who would be helped to a marked degree by a change in the type of training they receive, are not trained for those occupations in which their handicap of intellectual subnormality puts them at a minimum of disadvantage. The percentage of those handicapped by simple intellectual sub-

normality is much larger than that of those handicapped by feeble-mindedness, and if the former group are to be cared for, present differentiated provisions must be greatly increased. Special classes as now conducted are not enough.

Mental Hygiene Education. The school and other community agencies may also aid mentally deficient children by providing or making available mental hygiene treatment. The intellectually subnormal, and the feeble-minded as well, are especially exposed to the danger of mental ill health. The disadvantages under which they suffer may lead to the development of inferiority complexes, day-dreaming, withdrawal, split personality, and so forth. The biosocial determinists claim that oftentimes the ranks of the feeble-minded receive recruits from the intellectually subnormal group because the stigmas incurred by such subnormality lead the boy or girl to compensate by antisocial behavior that increases his or her status in the eyes of other children. Hence it is possible that many mentally deficient children may be prevented from developing behavior problems and more serious disorders if these facts are recognized and proper mental hygiene methods are instituted.

A number of public and private schools now employ educational counselors, visiting teachers who have had psychiatric training, or even complete child guidance clinics. Such provisions are extremely valuable in dealing with the problems of the mentally deficient child. Oftentimes he can be given some insight into his own problem and a suitable adjustment effected. Again, parents may be instructed in attitudes proper to their relation with their mentally deficient child, and avoid undue pressure in scholastic matters which may possibly lead to mental ill health. The mental hygiene needs of the intellectually subnormal, and perhaps of the feeble-minded as well, are of the same general nature as those of the normal child except for the fact that one element in the total situation, that of mental deficiency, is a constant.

Institutional Care and Training. Although special classes and differentiated education will care for the great mass of

the feeble-minded and intellectually subnormal, certain cases will need the added training and supervision possible only within an institution.

Institutional care and training for the feeble-minded in America started in South Boston in 1848. There are now 83 state institutions and one in the District of Columbia, with a total population of approximately 50,000. Five states have no institutional provision for the feeble-minded. There are now 113 private institutions, with a total population of more than 2,000. But these provisions, extensive as they may seem, do not afford sufficient accommodation for even the most serious cases. A questionnaire, sent out in March 1930 to the superintendents of all state institutions, reveals the fact that there are about 14,000 applicants for admission for whom no space is available. Since by far the greater number of the feeble-minded are in charge of relatives or friends, who often do not realize the desirability of temporary or permanent commitment in many cases and who therefore do not make requests for admission, probably less than one-fifth of those needing institutional care and training are now receiving it. The equipment and personnel needed to train those now in institutions are also inadequate. Institutional care must be provided for all the feeble-minded who cannot care for themselves or make suitable adjustments in the community and whose parents cannot provide suitable care or surroundings for them; no state is too poor to shoulder this fundamental responsibility.

The purpose of training mental defectives in institutions is to give each child the opportunity to develop to the limit of his capacity; to render mentally deficient children easier to live with and less expensive to care for in case they cannot achieve social self-direction and support; to prepare high grade mentally deficient children for return to the community as self-supporting and well disposed members of society.

In order to achieve these purposes, training must be directed toward the development of desirable social behavior, beginning with basic habits of personal care, and leading on

to the development of self-reliance and self-control, obedience, industry, thrift, moral behavior, and capacity for social intercourse.

Here, even more than in special classes and differentiated education, emphasis must be laid upon manual and industrial training rather than upon academic achievement. Hand work of all sorts offers these children the best educational and vocational opportunities. Institutional care and training, taking place as it does under relatively controlled conditions, should set standards for all extrainstitutional care.

Special pedagogy is necessary in teaching the feeble-minded; everything should be done to make the teaching concrete by the use of graphic material, models and so forth. Even with the moron group it often requires three years to accomplish what the average school child can do in one. Since all academic subjects require some power to deal with abstractions, and this usually does not develop rapidly in the mentally deficient and never approximates the level possible in the normal child, it seems advisable to teach the child academic subjects in the latter part of his school career rather than in the early stages. The types of vocational or industrial training that may be successfully taught at the various age levels are now fairly well known, although much research work remains to be done.

Answers to a questionnaire sent out to all superintendents of state institutions (48 of whom replied), contained the following information concerning scholastic, industrial, and vocational training, social and habit training, and follow-up service:

Instruction and other service along these lines is at present given to more than 40,000 children. Scholastic training is given to about one-fourth of the total institution population, although 3 of the institutions submitting data have no schools.

It is generally agreed that children who can do the work of the sixth grade should not occupy space in insti-

tutions for the feeble-minded while so many serious cases cannot be admitted. Nine institutions give seventh grade training and 4 teach or attempt to teach eighth grade work. Some of the institutions rely upon epileptics who have not deteriorated and who, when of normal intelligence, are able to teach with fair effectiveness. Simple forms of industrial training are given to about two-thirds of the children; vocational training is given to about one-sixth.

From the evidence accumulated it seems desirable to give special attention to teaching the simpler operations characteristic of local industries; in this way many mentally handicapped normal children can be made at least partially self-supporting when their training is finished. The importance of habit and social training cannot be overemphasized. Herein lies one of the chief advantages institutional training offers the mentally deficient, for instead of being compelled to compete with children who far surpass them in achievement, mentally deficient children in institutions work and play with others of their own level, thus avoiding many personality difficulties. In practically all institutions they are trained in emotional control through parties, clubs, and so forth. Persistent effort in dealing with untidiness, bad table manners, and violations of common decency is often quite successful.

Through their departments of social service the majority of institutions carry on follow-up work with patients who are permitted to go home for short visits or who are on parole. Some superintendents however report no personnel or facilities for such work. But recent investigations have shown that even though the institutions have follow-up staffs they do not at present adequately serve their paroled patients. If institutions are to fulfil adequately their function of returning trustworthy cases to the community a great deal more must be done along these lines.

Colonization and Parole. For present purposes a colony may be defined as a number of mentally deficient persons,

living together under supervision and control outside of, but in affiliation with, an institution and supported more or less by group earnings. Such colonies have been maintained in connection with state institutions for many years. Prior to 1906, practically all of them were fairly large and were planned to relieve the central institution of overcrowding with custodial cases and to provide larger and less costly bed capacity, as well as a greater acreage of farm lands on which to train and profitably to utilize inmate labor.

About 1906, colony plans varying somewhat from the type just described began to be instituted. The departure lay in the development of small colony units, serving not only as custodial centers or homes, but also as training centers and providing increased bed capacity as well. This is accomplished by distributing colonies in outlying communities. Only a small number of mentally deficient persons are placed in any one community, the number being determined by the opportunities for employment. This employment provides a continuation school in industrial and vocational training and in social and economic efficiency which frequently makes possible the successful parole of stable cases to self-support under supervision. The fundamental object is to fit young males or females for a life of socially acceptable self-support in a limited environment under conditions of social and economic efficiency. In such working colonies, the annual cost to the state for supervision, and so forth, for each individual, is only about eight to twelve dollars instead of the maintenance cost of \$350 a year, exclusive of first cost of plant, for care and treatment in an institution.

There should be a continued development of small and carefully located colonies in conjunction with institutions for the feeble-minded. For although one of the chief functions of the institution will always be the permanent segregation of those who should not be returned to the community, it should also make special provision for mental hygiene and train for return to the community through such colonies.

If and when the public schools and other community agencies become more generally effective in the mental de-

ciency program, and if selection is carefully made in the first place, no very high percentage of cases committed to institutions can be returned with safety to themselves and to the community for they will be those which well organized extrainstitutional treatment, all too limited at present, has failed to benefit.

Colonies relieve overcrowding in institutions, provide better living conditions, prevent deterioration of the more hopeful cases, yield greater happiness, promote mental hygiene, and are cheaper both in the beginning and, in the long run. Moreover, inasmuch as extrainstitutional treatment is not highly developed at present, colonies receive many cases that under proper conditions need not have been committed, and hence their function of training for return to the community is quite important.

Under the colony plan, as at present practiced, a group of boys or girls who seem capable of freer action than is possible in the central institution are, or should be, given preparatory training which ultimately makes it possible to assign them to small agricultural, domestic or industrial colonies under careful supervision. The colonies are usually not in close proximity except that for administrative reasons it is often advisable to place them in pairs. Every effort is made to avoid saturating a community with mentally deficient persons; when one seems full enough, the colony, being in rented property, can be moved elsewhere.

Junior colonies for boys from twelve to sixteen afford an excellent means of classification as well as schools valuable for training them to like and to be efficient in farm work, so that when paroled they are both happy and helpful. Farms occupied by these colonies sometimes increase greatly in value because the large labor supply available promotes high grade maintenance and improvement.

In addition to their great value for maintenance and training purposes, the colonies afford very good and very cheap bed capacity. The rural exodus and restricted immigration has opened up a wide field of employment in knitting mills, glove factories, and so forth. Except in times of eco-

conomic depression, the industrial colonies are also quite successful.

Colonies have many advantages, for if the mentally deficient succeed in colony life the institution, by its training, has given them greater freedom, relative mental health, and happiness and has thus made their continuing segregation less irksome. Further, if colony training helps them to succeed to an extent that they seem likely to be socially adequate, they may even be paroled. Information concerning opportunities for parole placement with relatives or friends should be sought constantly, for the results of such parole sometimes warrant the procedure. On the other hand, parole with strangers may at times be more successful. If supervision is practiced many carelessly committed cases may very well be cared for in the home community either by relatives or in foster homes.

Parole periods, provisional and extended, will serve to determine the feasibility of non-institutional care under supervision. Parole periods should be divided into two classes; first, so-called *short vacation* of about four weeks, which give enough time to determine probable success; second, if results on the short vacation are satisfactory, the so-called *long vacation* of a year or more. When commitment procedure has included careful clinical diagnosis, parole should not be practiced unless careful and complete supervision can be given. At present some state institutions which are badly overcrowded and handicapped by insufficient funds return to the community mentally deficient persons, who have not been adequately trained and who cannot be properly supervised. This practice, although sometimes unavoidable, cannot be too strongly condemned. Patients, even when a high degree of success on parole has been attained, should never be discharged if discharge means lapse of supervision. The handicaps of feeble-mindedness can never be completely overcome and adverse environmental influences may at any time make recommitment necessary. It is the part of wisdom, therefore, to shield the paroles from such influences by means of supervision.

Supervision

Parole. The community and the state have not discharged their obligations merely by training for return to the community. Competent supervision must be provided, for only by guiding and directing the feeble-minded person, in many instances throughout his entire life, can the training be made effective. Moreover, no ward of the state should be paroled until all available information regarding home conditions has been carefully considered. In many cases the painstaking effort of institution and colony training that has made the child happy and moderately capable of self-direction is entirely lost: first, because the low grade or unsuitable environment to which he is returned makes successful adjustment impossible; or second, because supervision is lacking. Every effort should be made to avoid placement in situations similar to that in which the individual has already failed. In many cases this means placement with strangers rather than in the home.

Supervision by the institution responsible for training, especially if it is a state institution, is usually preferable to supervision by agencies less familiar with the individual.

Non-institutional Cases. Proper occupational placement with subsequent supervision is an extremely important link in any practical system for the adjustment of the feeble-minded, and can scarcely be overemphasized. There should be an extensive program of occupational placement and follow-up work under the direction of the state labor or welfare department for the graduates of public school special classes for the feeble-minded. This is expensive, but cheaper in the long run than the social costs of neglect.

Further, supervision of home conditions as well as advice to the parents of the children concerned, should be given. This calls for great tact, but when its benefits are realized opposition will rarely be evident.

If occasional assistance is given the family in planning work and recreation many of the children committed to state guardianship will never need institutional care. Other homes

will need detailed instruction and assistance in safeguarding the feeble-minded children in their care, especially if these children are feeble-minded girls.

Foster and boarding homes are sometimes excellent substitutes for care by parents and relatives. In some states all homes receiving state money for giving care to such children are licensed and are under state supervision. Recently a number of schools for day care only have been opened in a few states. Usually these are designed for children whose intelligence is so low that they cannot enter special classes in the public schools and whose families are able to provide for them without recourse to state assistance. Local communities frequently find working homes for mentally deficient children where practically the same type of supervision is given as in the homes of relatives. Young Women's Christian Associations, Young Men's Christian Associations, and similar boarding places are chosen. Club houses not connected with any institution for high grade feeble-minded and intellectually subnormal girls without adequate homes are sometimes established in larger cities.

No matter what type of home care is given, some supervision is absolutely necessary. There is little point in setting up an elaborate program of special classes and occupational placement unless parents or guardians are helped to a real understanding of the child's problems and unless periodic examination to determine the degree of success achieved in the home adjustment is given. Otherwise habits that have been carefully built up under specialized training may be destroyed. Proper supervision is at present extremely difficult, not only because of adverse family and community attitudes, but also because of lack of personnel. A greater number of interested and trained social workers are much needed.

The Intellectually Subnormal. The differentiated education given the intellectually subnormal child like the special class training given the feeble-minded child, should fit him for some vocation which does not make demands that he cannot meet unaided. After such differentiated education has

been given, however, it is necessary to see that the child is guided to the vocation for which he is best fitted. This may involve several changes before the right niche is finally found, and it is the function of the school, or of some agency closely linked with the school, to see that proper guidance follows differentiated education just as occupational placement follows special class training. The need of proper guidance can scarcely be overemphasized. Long continued effort which has rendered the intellectually subnormal child fairly competent in some sphere is often useless because his own failure to realize his limitations, the demands of relatives, and similar influences lead him to attempt more than he can possibly carry out successfully. His resulting social failure is then blamed upon the school which trained him or upon intellectual subnormality as such, whereas proper guidance probably would have permitted him to achieve social adequacy.

The public schools have a peculiar responsibility for proper guidance of the intellectually subnormal because these children are capable of a fair degree of initiative and resourcefulness and because they possess qualities which if guided in the proper channels may lead to independent social adjustment. Intellectually subnormal children generally leave school as soon as compulsory school laws permit, enter into industry or other occupation at an early age, rarely if ever with regard to the future. An adequate system of vocational guidance and occupational placement adapted to their needs would tend to safeguard the social-economic future of such children and would, in some degree, also reduce economic waste.

Every school system dealing with the intellectually subnormal child should have an organized visiting teacher's service to aid in bringing about necessary improvements in the home situation and in securing for the child the right kind of neighborhood and community influences. This will also prove a valuable aid to proper adjustment in the economic field. The intellectually subnormal child is a total personality, and adjustment in one sector of activity may be either built

up or broken down by the degree of success or failure occurring in other sectors.

Two Further Points in Program

In addition to the minimum program for mental subnormality in its two aspects of feeble-mindedness and intellectual subnormality, there are two adjuncts with such extensive implications that they transcend the limits of local communities and perhaps even those of separate states. These are prevention of reproduction and research.

Prevention of Reproduction

It seems fairly evident that feeble-minded persons, whose hold upon social adequacy is always precarious, should not run the risk of reproduction, for apart from the possibility of the inheritance of their condition, the added burden of rearing children would oftentimes jeopardize their success in the community. Moreover, as parents they would be able to provide only a feeble-minded environment, a handicap which should not be visited upon any child whether of low grade mentality or not.

We cannot be quite so sure that it is advisable to prevent the reproduction of the intellectually subnormal, even if the more drastic measures of prevention were at present possible. For example, regardless of what the extreme negative eugenists may say, public opinion would not sanction the sterilization of more than thirteen million inhabitants of the country. Furthermore, the sheer magnitude of the undertaking would be far beyond any facilities now existing or likely to be created in the future.

What follows, therefore, must always be qualified in the light of the above considerations. In the majority of cases the methods proposed for the prevention of reproduction apply primarily, although not exclusively, to the feeble-minded, only a small proportion of the intellectually subnormal coming within the scope of such measures. It seems safe to say that drastic steps for the prevention of reproduction

should be taken only when intellectual subnormality is linked with psychopathic trends or with forms of gross antisocial behavior that are likely to be passed on to offspring by physical or social inheritance.

Prohibition of Marriage. Twenty-seven states and the District of Columbia now have laws forbidding the marriage of feeble-minded persons; 13 states specifying feeble-mindedness as a reason for prohibiting marriage. Letters were sent to bureaus of vital statistics and state boards of health throughout the country asking for the number of cases in which such laws were actively operative during the last five years, but since records of applications are kept by county rather than by state bureaus, replies gave little information. In general, such laws are usually worthless because few or none of them provide for diagnosis or other means of determining the mental condition of persons who apply for licenses. Until some such method is instituted or until there is a general state registry of all the feeble-minded discovered by clinical diagnosis, laws merely give a sense of false security that may be more harmful than their entire absence. If registration were properly carried out and marriage licenses were not issued until the central confidential exchange had given the applicants a clean bill of health, or until sterilization was performed, such marriage laws might be of some value.

Segregation. Previous to 1846 there was no special state effort in the United States toward segregating the feeble-minded, but by 1876 the desirability of segregation was more extensively recognized and in 1893 no less than 17 states had institutions for the mentally deficient. At present almost all states provide for separate institutional care. More frequent discovery of mentally deficient children in the schools; rapid increase in urbanization; emotional and similar stresses brought about by the proliferation of mechanical devices; the flood of mass immigration that has poured over the country, with the consequent clash of cultures and the personal and social disorganization of those most affected by this clash; economic, social, and emotional

unrest associated with divorce, desertion, and non-support which has been so closely correlated with the breakdown of the traditional functions of the family—have all contributed to these extensions of state institutions.

Prior to 1910 it was maintained that all mentally deficient persons should be confined in institutions for life. At the present time, however, life segregation is applied only to those who are socially and economically unadaptable elsewhere.

Although long continued segregation is well adapted for those feeble-minded who should under no circumstances be returned to the community, it is surely unjust as well as impracticable to keep large numbers of feeble-minded persons who are fairly trustworthy under home or community supervision confined for a large part of their lives because of the possibility that they may reproduce their kind. In all probability, not more than .5 per cent of the total population should be segregated under any circumstances. Hence it is obvious that segregation, although a useful measure, is of somewhat limited application: it cannot be relied upon for prevention of reproduction of more than a fraction of the feeble-minded, to say nothing of the intellectually subnormal.

Contraception. The instruction of *high-grade* feeble-minded and intellectually subnormal persons in the use of suitable methods of birth control has been advocated by some persons; it is claimed that in this way the large number which cannot be segregated can be reached, and that their socially and economically useful functions can be carried out with a maximum of effectiveness. The advocates of contraception point out that it is difficult enough to be self-supporting when mentally handicapped without the additional burden of a large family, and that contraception will sometimes make possible the avoidance of dependency when nothing else would. Even when other types of objection are disregarded, however, it has yet to be demonstrated that the high-grade intellectually subnormal, to say nothing of the feeble-minded, will persistently make use of birth control methods over a period of time, and consequently the efficiency of in-

struction in such methods is at present highly doubtful. Where segregation or selective sterilization are for any reason undesirable or impracticable, however, contraception is perhaps the indicated alternative, although the Subcommittee *as a whole* does not recommend it. Birth control clinics, such as have already been instituted in many large centers of population, are probably the best means of giving the necessary medical examination and instruction.

Selective Sterilization. In those cases where segregation and contraception for the whole reproductive period would work grave injustice, and where at the same time persistent use of contraceptive methods is not likely or is undesirable, sterilization is apparently the best means of preventing reproduction by the mentally deficient, particularly the feeble-minded.

Twenty-four states now have laws permitting sterilization. A survey made in 1926 showed that the law was functioning satisfactorily in 4 states, and with moderate efficacy in 8 while in the remaining states operations were performed sporadically or not at all. The reason for failure to function in so many states (12) arises from the fact that when the laws were passed special provision for the carrying out of the necessary operations was not made nor in most cases was any regular source of funds provided. The situation is not altogether hopeless, however, for the passing of laws concerning sterilization by so many states, and the support given by the supreme courts of most states and recently by the decision of the United States Supreme Court indicates that a considerable body of opinion favoring sterilization has been built up. Properly drafted laws permitting sterilization are constitutional, so that the only obstacles now remaining do not present the impenetrable front of legal barriers.

If the fullest use is to be made of this preventive measure, it is necessary to begin an extensive educational campaign which will convince the public that the operations necessary for sterilization, vasectomy and salpingectomy, cause no recognizable alterations in physiologic processes

of adults and are not attended by excessive mortality. Inasmuch as marriage may be permitted to sterilized feeble-minded persons, many social problems are obviated thereby. There are at present no legal, surgical or humanitarian obstacles to the extensive practice of selective sterilization of the adult feeble-minded; these facts should be impressed upon the consciousness of every responsible citizen.

Of all the methods mentioned, selective sterilization is perhaps open to the least objection, especially where the feeble-minded are concerned, but in view of the adverse opinion prevailing in some quarters it is probable that many cases, in which it could well be used must, for some time in the future, be dealt with by means of segregation or contraception, in spite of the injustice to the individual and social risks often involved.

The persistent use in the present report of the term *selective* in conjunction with sterilization is intended to emphasize the point that sterilization should never be performed without the most careful examination of all the circumstances in the case by experts delegated to the task. There is little or no point in sterilizing the feeble-minded who must remain in custody for life, for the operation does not effect any alteration in the intensity or frequency of the sexual urge or in the capacity to perform the sexual act; it merely prevents reproduction. Moreover, a great many cases of secondary feeble-mindedness can plainly be demonstrated to be non-hereditary. Only when it is probable that normal children born to parents afflicted with secondary feeble-mindedness will be exposed to the feeble-minded environment of the home is sterilization indicated. Once more, there is no use whatever in sterilizing delinquents and criminals, whether feeble-minded or not, in the belief that the crime rate will thereby be reduced. Crime is largely a social product and is not unfailingly correlated with feeble-mindedness nor indeed with any particular biological trait.

When adequately safeguarded, little individual or social danger attends sterilization, however, and for the prevention of some of the individually and socially injurious effects of

low-grade mentality, selective sterilization may be regarded as a highly desirable although perhaps not indispensable adjunct to any program of prevention.

Research

Only by constant research into the causes, prevention, and amelioration of feeble-mindedness and intellectual subnormality, can maximum control be attained.

Not enough is known, for example, about the respective proportions of primary, largely hereditary, and secondary, largely acquired before, during, or soon after birth, mental deficiency. Much that was formerly thought to be due to deviations in the germ plasm alone has in recent years been shown to be associated with encephalitis, meningitis, poliomyelitis irradiations, endocrinopathy, syphilis, malnutrition, birth or childhood injuries, and so forth. If medical science could be developed to prevent these diseases a considerable amount of feeble-mindedness would probably be prevented.

The word *probably* is used advisedly. The question whether associated phenomena are causally connected, so that malnutrition could be spoken of as a cause of feeble-mindedness instead of merely as occurring in conjunction with it, is at present highly controversial, and should be more thoroughly investigated. This should not carry with it any attacks on either the hereditary or environmental points of view, but should simply be research that will provide more facts that will support either contention.

Neither do we now know enough about the amelioration or cure of secondary mental deficiency. About all that we can rely on is the use of thyroid products for the control of cretinism and the early medical treatment of childhood syphilis. A long list of projects for research might be given, showing the tremendous extent of the field which still remains unknown. The Mongolian type of mental deficiency is one of the outstanding research problems because of the peculiar grouping of morphological symptoms in this category, and there is strong presumption that research on the causes and treatment of this condition may eventuate in success. Very

little scientific study of the low-grade feeble-minded known as idiots has been carried out since the early work of Itard and Seguin. The study of idiocy by means of the genetic and developmental scales available for normal infants and by means of laboratory experiments in perceptual adaptive reactions may yield information of much value for our knowledge of the normal as well as the subnormal. Again, birth palsy should be intensively studied. Little has been done in correlating the character of the lesions involved with the adaptive limitations. More carefully conducted and extensive studies of hereditary factors in feeble-mindedness and intellectual subnormality are needed. There is at present a strong reaction against the work of the early investigators which is perhaps justified on the score of the faulty methodology sometimes used, but at the same time the presumption that much feeble-mindedness has a hereditary basis cannot be ignored. At present, this is perhaps the most important field of research, although it is so little in favor that nothing of fundamental importance is being done. Intensive research in clinical psychology is necessary in order to discover whether or not there is a fundamental biological difference between the feeble-minded of high grade and the so-called inferior normal or intellectually subnormal as the biological determinists maintain. Experimental research of the varieties noted should be supplemented by theoretical consideration of standpoints and postulates; this means that philosophical and logical studies in the theory of mental deficiency are necessary. The whole field is in a chaotic state, and it is highly probable that much experimental work now being conducted is based upon methodologic viewpoints and theoretic presuppositions that careful armchair research, which at present is not fashionable, could have guided in the proper channels.

There is also a pressing need for research in the incidence of mental deficiency throughout the whole country. Such research should be undertaken by the United States Census Bureau; no other agency has the finances or the nation-wide organization that would warrant such an under-

taking. Since practically all our figures are out of date or conjectural such a census is badly needed.

In view of the technical nature of the information to be obtained and the necessity for uniformity in the application of the tests, the organization of such a nation-wide census must be highly centralized. A central staff composed of the best statisticians, psychologists, social psychologists, and sociologists in the country should be organized to work out the methods to be used. Following this, travelling examiners and census takers should organize into flying squadrons, each squadron covering population units of uniform size. In order to insure uniformity in the application of tests and to do their own testing when data are not available or when local facilities prove inadequate, their function should be to cooperate with psychologic examiners in the schools, with child guidance clinics, and institutions for the mentally subnormal. In all probability, the Children's Bureau and similar departments could be called upon to assist the Department of the Census in this undertaking. As a means of securing the active cooperation of these groups with the flying squadrons, at least six months in advance of the opening census date, special conferences of psychologists, sociologists, educators, social workers, statisticians, should be called in all the states.

State staffs could be employed for carrying out the work of preparation for the actual tests. A number of persons in every large state should be brought to some central point in that state, or elsewhere, for an extended course of training in the machinery of the census and in the tests and other devices to be used. These persons in turn should act as instructors of the local staffs cooperating with the flying squadrons. The composition of these local staffs will of course vary but should be of as high a caliber as finances will allow. A nation-wide census of this kind would perhaps do as much to advance our knowledge of and ability to deal with mental deficiency as any other one thing.

No institution now has available the large funds which should be spent for research purposes. Ten per cent of what is now allotted to maintenance is the least that should thus

be used. Further, research foundations should be instituted. Some privately financed research is now being carried on but funds are far from adequate.

GUIDANCE OF COMMUNITY EFFORT

The necessity for a broadly conceived and administered program for the mentally deficient is evident. It is also evident that although local communities have a large share of responsibility, they must be properly guided. A vital requisite is legislation establishing and facilitating the work of strong state agencies for the direction and control of the more general aspects of the work of local agencies. The state could thereby establish standards, maintain a comprehensive registration service, coordinate and direct local efforts as well as offer facilities for clinical diagnosis that local communities cannot provide.

Establishing Standards

Standards should be set by the state, although a good deal of the responsibility will necessarily rest with the local welfare and educational officials. The standard setting function should be exercised by furnishing a service that will enable the local community to be sure of the competence of its clinicians, visiting nurses and teachers, special class teachers, psychologic examiners, vocational placement workers, and so forth. Uniform statistical procedure and standard tests and classifications of the various types of the mentally deficient should also be established.

The establishment of standards is especially needed in the field of terminology. The terms *feeble-minded*, *mentally defective*, *backward*, *retarded* and *atypical* are used almost interchangeably in the various state laws relating to mental deficiency. The present maze of legal verbiage should be ruthlessly weeded out, and definitions in accord with the latest advances in scientific research should be written into every statute.

Statutory provision for the subsequent modification of definitions by responsible boards of experts who will take into account all the changes made necessary by advance in research, and who will not have to run the gauntlet of legislative interference is still more important. No inflexible statutes should be tolerated. Laws authorizing the establishment of school clinics reaching every public school district throughout the state should be enacted. The formation of special and differentiated classes should be authorized. Admission to state institutions should be passed upon by boards of experts and not by the outworn device of jury trial. Every consideration should be given to voluntary commitment. Parole laws and statutes permitting colonization should be established. Sterilization statutes with satisfactory terminology defining persons to be sterilized and describing method of operation should be passed. The mentally ill should be definitely distinguished from the mentally deficient. Provision for a state department of research should be made. In short, everything should be done which will facilitate the application and administration of all agencies dealing with mental deficiency.

Comprehensive Registration Service

Registration has already been discussed; it need only be added that feeble-minded and intellectually subnormal persons can often be greatly helped if adequate records are kept in a central repository, open only to responsible persons.

Coordination and Direction

It is probably advisable to have a branch of the central state organization operative in each county, particularly in the case of large states. Such branches have proved to be of great assistance in directing the state-wide aspects of the work of local agencies and in assisting those agencies to make full use of facilities offered by the state. There must be correlation of state and community activities if any program such as that discussed here is to yield full benefit to the feeble-

minded, to the intellectually subnormal, and to their more fortunate fellow citizens as well.

Federal coordination and direction of the work of the separate states is also a possibility that should be strongly considered. The work of the Children's Bureau, for example, might very well cover a much larger field than it now does. At the same time, it must not be forgotten that certain powers are reserved to the states and that it is never wise to deprive states or local communities of functions which they can and should exercise for themselves. The whole question of federal direction and control is highly controversial, and cannot be gone into here. Enough has been said to indicate its importance.

SUMMARY AND CONCLUSION

Feeble-mindedness and intellectual subnormality constitute a relatively serious problem, but intelligent action, that is, diagnosis, treatment, supervision, prevention of reproduction, and research can do much to render it less serious. The hopeful fact is that a large proportion of mentally deficient persons can be diverted into channels of social usefulness—made social assets rather than social liabilities. Responsibility rests upon the normal citizen of the community. Progress will only be made by facing the facts and acting in the light of the knowledge thus acquired.

Maximum assistance to the mentally deficient in their struggle to attain social adequacy is not only simple justice to an unfortunate, handicapped group, but is also indispensable to the highest welfare of the American people as a whole.

APPENDIX

I. BIOLOGICAL AND BIOSOCIAL DETERMINISM

Biological Determinism

One division of the Subcommittee contends that it is possible, although not yet entirely susceptible of formal scientific statement, to deal with feeble-mindedness as a clinically differential entity in the higher as well as in the lower levels. In addition to intellectual subnormality it is claimed that the true feeble-minded as distinct from persons who are merely intellectually subnormal, manifest certain qualitative differences such as lack of common sense which mark them off constitutionally from other persons of the same intelligence level who are not feeble-minded, and which make their social inadequacy highly probable.

According to this contention, morons and borderlines are physically, mentally, volitionally, socially, and educationally inferior to the intellectually subnormal of the same intelligence level, and the application of the term *feeble-minded* to the latter group is highly unsound. The accurate differentiation of the feeble-minded within the 60 to 85 I.Q. range and the intellectually subnormal or retarded within the same range is therefore a task demanding all the techniques of clinical psychology, a task where intelligence tests alone are not sufficient. The task is rendered still more difficult by reason of the fact that the intellectually subnormal sometimes are social failures, for example, criminal dependents, and so forth, just as the intellectually normal often are, and just as the feeble-minded, according to standard definition, usually are. It is not possible, therefore, to use only the combined criteria of intellectual subnormality plus social failure or inadequacy as a definition of feeble-mindedness, for this

would also apply to some of the intellectually subnormal. On the basis of this contention, therefore, the intellectually subnormal who become social failures cannot be properly classified as feeble-minded if they present no clinical criteria of feeble-mindedness.

The converse of course is also true; a great many persons in whom all the clinical criteria of feeble-mindedness can be found upon examination have not, because of peculiarly favorable environmental factors, manifested their fundamental social inadequacy by overt failure of any noticeable variety.

Biosocial Determinism

Another division contends that it is not yet possible and that it will perhaps never be possible to deal with feeble-mindedness in the higher as well as the lower levels as a clinically differentiable entity. It is claimed that there is no generally demonstrable biological difference between the higher levels of intellectual subnormality and the higher levels of feeble-mindedness as the latter term is used in the standard definitions, and that when social failure or inadequacy occurs it is a result of the combined action of biological and environmental factors in a total situation. According to this contention, morons as a class have the same potential capacity with the intellectually subnormal of the same intelligence level because identical with them. It is claimed that this position is reinforced by virtue of the fact that among normal persons of the same intelligence level certain psychobiological types such as the pyknic, asthenic, and athletic categories of Kretschmer may be differentiated, but that up to date it has proved impossible to predict social success or failure on the basis of these typical groupings alone.

It is also maintained that just as normal persons of the same intelligence level may under proper conditions be rendered socially adequate on the one hand or socially inadequate on the other as a result of favorable or unfavorable situational factors, the higher grade mentally deficient person may be kept within the range of normal behavior or be

forced into feeble-minded behavior because of situational factors. Hence although the application of the term *moron* to the intellectually subnormal is highly unsound, it is unsound for social reasons, and the use of different terminology for the two groups (intellectually subnormal and feeble-minded) should not lead to the conclusion that they differ as groups in any particular except in that of discernible social failure or its reverse.

A further contention is that for no appreciable proportion of the 60 to 85 I.Q. group is social inadequacy inevitable, although faulty situational factors may at present make it fairly frequent—about one-thirteenth of this group are social failures. Another assertion is to the effect that although careful clinical methods are necessary in dealing with the mentally deficient, this is not because any generic constitutional difference between the feeble-minded and the intellectually subnormal can thereby be established, but because detailed knowledge of constitutional differentia found in particular cases makes the task of diagnosis and possible social adjustment easier. This opinion regards the psychometric and social-economic criteria of so-called feeble-mindedness on the one hand and of intellectual subnormality on the other as of equal importance, and that other criteria, although carefully considered in particular cases are not accepted as basic generic differentiations.

II. INCIDENCE OF FEEBLE-MINDEDNESS

The last country-wide census of the feeble-minded dates from 1923, at which time there were 80,098 feeble-minded persons in institutions in the United States, distributed as follows:

- 42,336 in institutions for the feeble-minded
- 6,750 in institutions for the epileptic
- 18,829 in hospitals for the mentally ill
- 12,183 in almshouses

Data on first admissions afford somewhat more recent figures. Feeble-minded persons who had never before been

committed entered institutions for the feeble-minded and institutions for the epileptic in the following numbers:

6,053 in 1922

6,972 in 1926

7,288 in 1927

Of the feeble-minded admitted in 1927 over 70 per cent were under twenty years of age. In 1922 over 75 per cent of the first admissions were under twenty.

This might seem to indicate that there had been some decline in the incidence of feeble-mindedness, but this is not necessarily the case. The rapid development of child guidance clinics, of special classes in the public schools, of community supervision and home care, as well as the waning of alarmist propaganda, probably account for the decrease in institutional admissions under twenty. Certain it is that population figures and rates of admission of feeble-minded to institutions do not afford a reliable index of feeble-mindedness among children in the United States or of any one state. The schools for the feeble-minded are now so overcrowded that it is physically impossible to admit more than 25 per cent of those seeking admission. The major portion of children classed as *retarded* who may be either feeble-minded or intellectually subnormal, as these terms are used in the present report, are now trained in the public schools. In 1929, almost 1.5 per cent of the school population of Massachusetts were in special classes for the retarded, and in Los Angeles 3 per cent of the children between the ages of five and fourteen were in special classes. This certainly has had something to do with the decrease of institutional admissions.

Other available data on the incidence of feeble-mindedness are classified in categories which do not wholly coincide with those used here. For example, the National Committee for Mental Hygiene made psychiatric examinations of over 50,000 school children in 12 different states, East, West, North and South. In this survey some staffs used the term *subnormal* to designate the same degree of mental de-

ficiency which others called *borderline mentally deficient*. Other staffs used both designations, indicating the greater degree of mental deficiency by *borderline mental deficiency*. Translating their results into the terms used here, which of course introduces some inaccuracies but which is perhaps permissible, it may be said that from 3 to 5 per cent were found to be feeble-minded and from 8 to 20 per cent intellectually subnormal. It should be pointed out, however, that the total number of over 50,000 included a group of 15,000 composed of Negroes, Mexicans, and Indians. Regardless of the reasons for their low scores, it is well known that these racial-cultural groups do not reach levels as high as native white children, hence these findings must not be indiscriminately generalized. Again, it should be noted that the school group does not include children under six years of age nor very low-grade feeble-minded.

The data gathered from institutional commitments and psychiatric examinations, however, take into account a great deal more than mere intelligence scores. Consequently these data, where the feeble-minded are concerned, are probably fairly accurate. On the other hand, it is of no great value in determining the incidence of all mental deficiency or, to be specific, of intellectual subnormality. For such purposes the various revisions of the Binet-Simon scale are of considerable value and have been used in the estimates already given.

Age Distribution

In as much as mental deficiency is partially or wholly due to impairment of the capacity for mental development and in as much as this impairment is present from birth or from an early age there can be little or no change in incidence between various age groups. These facts, however, are not reflected in the institutional data. Patients in institutions for the feeble-minded in 1923 were distributed as follows:

<i>Age</i>	<i>Per cent</i>
Under 5 years.....	1.0
5 to 9 years.....	6.9
10 to 14 years.....	17.8
15 to 19 years.....	21.7

During 1922 over 75 per cent of the first admissions to institutions for the feeble-minded were under twenty years of age, and were grouped as follows:

<i>Age</i>	<i>Per cent</i>
Under 5 years.....	4.5
5 to 9 years.....	19.3
10 to 14 years.....	29.4
15 to 19 years.....	23.2

It is evident that the admission rates are highest in the ten to fourteen year age group. The rate of admissions to institutions for the feeble-minded for each 100,000 of the population of the same age were as follows in 1922.

<i>Age</i>	<i>Per cent</i>
Under 5 years.....	2.8
5 to 9 years.....	12.3
10 to 14 years.....	20.1
15 to 19 years.....	17.8

Sex Distribution

Figures for 1922, 1926, and 1927 show a preponderance of male admissions to institutions dealing with the feeble-minded. This is in part due to the greater proportion of males in the total population and in part due to the greater difficulty in controlling feeble-minded males. Moreover, there is greater reluctance to permit feeble-minded girls to leave home to be cared for by strangers.

Figures from the records of traveling psychiatric clinics in Massachusetts between the years 1921 and 1927 show a preponderance of boys among the mentally deficient school children referred to them even greater than that evidenced in institutional commitments. In spite of the mitigating factors, probably a higher ratio of marked mental deficiency is to be found among males than females.

Mortality

The death rate among feeble-minded children is very high. The 1922 data established the following points: the

higher the rate of mortality the greater the degree of feeble-mindedness; the highest mortality is in the fifteen to nineteen year age group; over half the deaths of patients in institutions for the feeble-minded were of those under twenty years; proportionately more males died than females, the rate for the former being 3,220 for each 100,000 under treatment and for the latter 2,480. The causes of death and rates for each 100,000 under treatment were listed as follows:

	Per 100,000 under treatment
Tuberculosis of the lungs.....	510.0
Bronchopneumonia.....	220.0
Lobar pneumonia.....	170.0
Influenza.....	130.0
Epilepsy.....	470.0
Diarrhea.....	150.0
Nephritis.....	70.0
Cancer.....	30.0
All other causes.....	1,090.0
<i>All causes.....</i>	<i>2,840.0</i>

Geographic Distribution

Census figures simply tell us the extent of special provisions the community makes for the care and training of its mentally deficient children. They do not indicate the real incidence of feeble-mindedness by locality or by ethnic groups, and tell us nothing whatever of the large proportion for whom no special provision of any kind is made.

Some indication of variations in incidence is afforded by psychiatric surveys of the public school population. The extensive samplings made by the National Committee for Mental Hygiene in different states and cities reveal astounding differences.

In 1922, a survey of 3,000 children in Louisville, Kentucky, showed about 4 per cent of them to be feeble-minded. A survey of 800 children in the rural districts of Kentucky carried on at the same time showed that over 10 per cent were feeble-minded. In the same year, out of 4,000 children examined in Wyoming less than 1 per cent fell in the feeble-minded category; at about the same time a study of 3,000

children in Texas showed that almost 10 per cent were identifiable as feeble-minded, and in Rhode Island psychiatric examination of 1,000 children showed almost 9 per cent in this same group. In Cincinnati, however, but 2 per cent of 4,000 children were thus classified in 1921; in Arizona but 3.5 per cent of 9,000, and in North Dakota but 1.5 per cent of 5,000.

Some of this wide variation is undoubtedly due to the varying clinical criteria used by different examining staffs. In some instances, great importance was attached to the results of intelligence tests; in others a large number of factors were taken into account. There can be little doubt that a large proportion of intellectually subnormal children were in many cases included among the feeble-minded; this is almost inevitable when examinations are not conducted with extreme caution.

One of the greatest difficulties has been the lack of reliable incidence data; nothing short of an elaborate and comprehensive study made by the United States Bureau of the Census or a similar body nation-wide in scope can help materially.

Types in Institutions

The shortcomings of figures based upon institutional commitments have already been discussed. In 1922, the following numbers for each 100,000 of the population were recorded in institutions for the feeble-minded:

	<i>Per cent</i>
Idiots.....	6.3
Imbeciles.....	19.1
Morons.....	13.8

The patients admitted to institutions for feeble-mindedness for each 100,000 of the population in 1922 were grouped as follows:

	<i>Per cent</i>
Idiots.....	1.0
Imbeciles.....	2.5
Morons.....	2.9

PROBLEMS OF MENTAL DEFICIENCY 387

Data on first admissions for 1927 show the following numbers for each 100,000 of the population:

	<i>Per cent</i>
Idiots.....	1.0
Imbeciles.....	2.2
Morons.....	2.8
Unclassified.....	.4

The large proportion of imbeciles and idiots thus shown to be under institutional care makes it possible to assert that less than one-tenth of the feeble-minded not in institutions are imbeciles and idiots; most are morons. Probably some intellectually subnormal children are included in the moron classification, particularly in those states where careful clinical research is not preliminary to commitment.

The foregoing data though faulty indicate that one of the many problems which confronts us is the development of extrainstitutional care for the large numbers of morons and intellectually subnormal persons who cannot and should not be committed to our overcrowded institutions.

III. RELATION OF MENTAL DEFICIENCY TO CRIME

In considering the relationship of mental deficiency to crime, several cautions need to be observed at the outset. First, because a certain proportion of social offenders or dependents are found to be mentally deficient, it cannot be assumed, as has so frequently been done, that mental deficiency is in itself a cause of social failure. Second, selective factors must be guarded against which tend to make the proportion of mental defectives among apprehended and convicted offenders considerably greater than their actual proportion among all social offenders. Such selective factors include the lesser ability of those with limited intelligence to escape detection, arrest and conviction; the lack of social status, wholesome environment, good parental oversight, and the influence of wealth and position which so commonly handicap the mentally deficient as compared with more privileged groups; the greater readiness to place normal offenders

on probation, and so forth. Third, the results of the intelligence examinations given to various groups of the socially inadequate must be considered with great caution because so often intelligence tests have been given and interpreted by persons unskilled in their use and interpretation. Fourth, even when the tests are carefully given and interpreted, varying criteria of mental deficiency and feeble-mindedness have resulted in findings that are not comparable one with another, and from which, therefore, it is dangerous to draw conclusions.

Because these cautions have been more fully observed in recent studies than in earlier ones, the later studies would seem to form a safer basis from which to draw conclusions. This applies particularly to studies of the relation of mental deficiency to crime and delinquency.

Crime and Delinquency

Mentally deficient persons sometimes manifest anti-social behavior. Studies before 1920 of the relation of feeble-mindedness to delinquency and crime apparently established a close correlation between them, and this was often interpreted in terms of cause and effect. These studies showed the following percentages of feeble-mindedness among inmates of various institutions:

Institution	Per cent
State prisons.....	27.5
Reformatories.....	26.8
Penitentiaries and workhouses.....	33.8
Industrial training schools.....	21.5

Often these studies were carried out with no great refinement of technique and in recent years the interpretations formerly placed upon them have been seriously challenged. On the basis of a study of over four thousand cases, Healy and Bronner state that "those who have so stressed the part played either by feeble-mindedness or by mental disease in the production of delinquency will obtain from these most carefully developed findings small support for their extreme

statements." They also state that the experience gained in follow-up work with the mentally deficient demonstrates that when properly cared for they do not develop delinquent or criminal tendencies.

Lowrey finds that child guidance clinics show mental deficiency to be a lesser factor in the production of difficult behavior than was anticipated. Intellectually superior children, as well as intellectually inferior children, are more likely to become conduct problems than the average child, and in individual cases the problems of the superior may not differ appreciably from those of the inferior. Lowrey concludes that "intelligence is only one of many factors which may produce objectionable reactions, and that factors of personality, the integration of the emotional and instinctive life, and in the social situation, are far more important than the mere question of intelligence alone."

An Ohio study comparing 100 normal and 100 mentally deficient boys with juvenile court records shows that although a greater proportion of the mentally deficient boys came from broken and underprivileged homes, the normal boys far exceeded them in the extent and seriousness of their delinquencies.

Sheldon and Glueck conclude from their intensive study of 500 criminal careers that although there is some consistent relation between mentality and postparole criminality, the association is not high, and that the difference between all the intelligence levels involved is less than might be expected.

Adler studied Illinois prison inmates by means of a refined technique, and concluded that they were a fair example, so far as intelligence was concerned, of the community from which they came and that therefore no direct correlation between crime and intelligence could be established.

Murchison compared prisoners in 5 states with the white draft group by means of the army Alpha test, and concluded that the criminal group were superior to the white draft group and that recidivists were more intelligent than first offenders. He therefore states: "Intelligence is just as serious a problem for criminality as is feeble-mindedness."

Weber and Guilford made a test of a Nebraska reformatory group which indicated that this group ranked above average intelligence as compared with army findings. They conclude that "mental deficiency becomes a cause of delinquency only when combined with certain character trends. . . ."

Wallace states that if two cross sections of the population could be studied from a psychiatric point of view, it is doubtful if those below 85 I.Q. would show more positive, active criminality than those above.

All this evidence seems to indicate that mental deficiency is in itself not a cause of crime, and that other aspects of personality which may be associated with normal as well as with subnormal intelligence are more directly concerned.

These considerations apply also to female offenders. Earlier studies claim that there is a high correlation between sexual delinquency and mental deficiency. More recent studies show that intelligence appears to have little to do with conduct, and female delinquents have been found to have the same degree of intelligence as non-delinquents.

VOCATIONAL ADJUSTMENT

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VOCATIONAL ADJUSTMENT

INTRODUCTION

THE preparation of physically and of mentally handicapped children for life's work is a task of major importance. In order that the handicapped may make their contribution to our social and economic life, we must develop a comprehensive plan through which they will receive that type of training which will permit them to share in the world's productive work. Efforts to imbue society with a wholly constructive attitude toward the handicapped, an attitude permeated with effective optimism, must constitute an important phase of the development of this plan.

Among the physically and the mentally handicapped in America today, there are large numbers of children who are now or will later become social and economic liabilities unless society's attitude toward the physically and the mentally handicapped becomes wholly constructive and a comprehensive program is developed through which they may enter the ranks of productive workers and thus share in the world's productive work.

A majority of physically and of mentally handicapped children possess aptitudes and abilities which, when developed by proper social, academic, and vocational education can make these children socially and economically competent. To every child is conceded the right to develop to the maximum of his capacity. It is society's duty to see that physically and mentally handicapped children have this opportunity as a matter of right and justice in order that human resources may be conserved, and that society may be protected against dependency, pauperism, frustration, and delinquency.

Physically or mentally handicapped children are in general more like than unlike normal children. Their needs are the common needs of all children, but due to certain weaknesses in physical or mental functioning they require a more intensive application of medical care and of social, academic and vocational education than do normal children.

Realizing the great need for developing a comprehensive program for the physically and the mentally handicapped, an attempt has been made to formulate recommendations which will accomplish this aim. The purpose of this report, therefore, is:

- To show that it is feasible to employ the physically and the mentally handicapped at the various levels of employability and, for the greater part, on an economic competitive basis
- To describe the extent and importance of the problem
- To indicate the present agencies assisting the handicapped and the phases of their programs which point toward a solution of the problem
- To outline the functions essential in the preparation of the handicapped for successful employment
- To suggest the development of a unified program coordinating national, state, and local activities in behalf of the handicapped
- To describe methods for creating those constructive attitudes on the part of parents, school authorities, commerce and industry, and the public which will lead to an appreciation of the handicapped child's vocational possibilities.

No attempt has been made to reconcile those valid differences of opinion with regard to the most suitable methods and procedure in dealing with handicapped children, but rather to suggest what, after careful study of available records, opinions of authorities, experiences of individuals and organizations, seems to be a reasonable program for the social and economic adjustment of handicapped children.

EXTENT OF THE PROBLEM

The extent of the problem with respect to the number of physically or mentally handicapped children who require specialized services for social and economic adjustment is not definitely known. Available data are fragmentary, isolated, and not generally reliable. However, on the basis of surveys of special classes in city schools, special surveys of the mentally deficient, censuses of crippled children, and tabulations of children in institutions, it has been estimated that in the United States there are more than ten millions of persons under twenty-one years of age who are physically or mentally handicapped. This estimate includes the blind and partially seeing, the deaf and the hard of hearing, the crippled, those who are mentally deficient or disordered, and those who are suffering from tuberculosis, parasitic, or cardiac diseases.

In a recent study based on data resulting from 45 investigations reported by 24 writers, and 146 estimates made by 89 authorities, Guy L. Hilleboe of Columbia University arrived at the numbers of atypical children requiring special class provisions in school systems, shown in Table 1.

TABLE 1^aTYPES AND NUMBERS OF ATYPICAL CHILDREN REQUIRING
SPECIAL CLASS PROVISION

Type	Requiring special class provision <i>Per cent</i>
Physically atypical	
Orthopedic cripple.....	.52
Blind and the partially sighted.....	.22
Deaf and the hard of hearing.....	.39
Organic defectives—heart trouble, tuberculosis, anemia, and so forth.....	1.65
Speech defectives.....	.33
Mentally atypical, mentally backward, mentally deficient, and epileptics.....	4.78
Total mentally and physically atypical.....	7.89

^a Hilleboe, Guy L. *Finding and Teaching Atypical Children*. Contributions to Education, Number 423. New York City, Bureau of Publications, Teachers College, Columbia University, 1930.

Although there may be a limited number among the large group of handicapped children who are not in need of highly specialized vocational adjustment services, the problem on

the whole is sufficiently important to require a carefully organized program for the preservation of the interests of the handicapped and of society.

FEASIBILITY OF PREPARATION FOR GAINFUL EMPLOYMENT

The feasibility of preparing the physically or mentally handicapped for, and placing them in, employment has been amply demonstrated. Experience has shown that, generally speaking, commerce and industry can absorb the physically and mentally handicapped at all levels of employability without appreciable interference with the rate of production in the industrial organization, provided those handicapped persons have had adequate preparation and have developed proper attitudes toward their handicap and work, and provided there is a favorable attitude on the part of commerce, industry, and the public.

During the ten years of its existence the state and federal rehabilitation services in 42 states have prepared for, and placed in, employment approximately forty-five thousand physically handicapped persons. A large number of handicapped have likewise been placed in employment by various other placement bureaus for the handicapped in the United States.

The economic aspect of vocational rehabilitation is of primary importance, both to the individual and to the state. In every instance where vocational training and placement have been adequately carried out, the financial returns have far exceeded the expenditures entailed. At the present time most of the activities are directed toward the training of adults; it seems logical that far greater results, both economic and social, would be achieved by work with children who have added powers of adaptability and adjustment. A recent study of 831 children of working age, fourteen to twenty-one, rehabilitated during the period 1920 to 1924,*

* Special studies of the results of vocational rehabilitation of children of working age made for the Committee by the Vocational Rehabilitation Service of the Federal Board for Vocational Education.

interestingly demonstrates the important results that may be accomplished through vocational rehabilitation efforts. At the time these children were inducted into programs of preparation for employment, a very large proportion had no jobs, even though many of them were already eighteen, nineteen and twenty years of age.

After having had the advantages of training and placement services, the majority of these children found suitable employment, as Table 2 indicates.

TABLE 2

EMPLOYMENT RECORDS OF 831 REHABILITATED CHILDREN

Rehabilitation job	Total cases	Ortho- pedic	Car- diac	Vi- sion	Hear- ing	Tuber- culosis
Trading.....	66	64	2	..	..	..
Manufacturing—semiskilled..	88	71	2	12	3	..
Manufacturing—skilled.....	212	189	2	10	11	..
Labor—miscellaneous.....	55	47	..	5	..	3
Agriculture—unskilled.....	8	7	..	1	..	..
Agriculture—skilled.....	14	13	..	1	..	..
Clerical.....	266	235	12	11	4	4
Technical and professional...	54	52	..	2	..	..
Transportation.....	10	9	..	1	..	..
Mining.....	9	9	..	..	..	..
Public service.....	...	...	..	..	..	..
Domestic and personal.....	30	29	..	..	1	..
Miscellaneous.....	17	12	3	1	..	1
Not reported.....	...	...	..	..	..	..
No job.....	2	...	..	2	..	..
<i>Total</i>	831	737	21	46	19	8

In 1928 a nation-wide survey of rehabilitation cases was made to ascertain whether the types of employment in which children and adults were trained were suitable to their specific disabilities, and whether rehabilitation as a service was really effective in the social and economic adjustment of the handicapped. Table 3 shows the status at the time of follow-up of 831 handicapped children who had been employed from one to five years after rehabilitation.

Table 4 gives the record of 382 placements of handicapped children, made by the Vocational Guidance Bureau, Department for the Handicapped, in the City School System in Chicago, during the period 1924 to 1929.

TABLE 3

FOLLOW-UP RECORDS OF 833 CASES

Status	Total cases	Ortho- pedic	Vision	Hear- ing	Organic defects
Employed:					
Promoted to better job.....	181	168	6	3	4
Working at job for which trained and placed.....	265	237	16	4	8
Unemployed:					
Dead.....	13	9	2	2	0
Because of business depression	57	49	4	3	1
Physically unable to work...	37	32	2	0	3
Vocationally unable to work.	8	7	0	1	0
Work uncongenial.....	30	28	1	0	1
Social reasons.....	117	99	10	5	3
Not reported:					
Unable to locate.....	123	108	5	1	9
<i>Total</i>	831	737	46	19	29

TABLE 4

RECORDS OF 382 PLACEMENTS OF HANDICAPPED

Handicap	Total cases	Trade and skilled hand-work	Trained office	Semi-professional	Miscellaneous, unskilled	Factory, unskilled
Orthopedic.....	236	33	59	19	76	49
Visual.....	19	0	1	0	12	6
Hearing.....	22	5	1	2	0	14
Organic defects: heart, lungs, and so forth...	113	19	40	6	14	34
Mentally subnormal and defectives.....	51	0	0	0	12	39

Table 5 is a record of a recent follow-up of 109 cases of these placements.

TABLE 5

FOLLOW-UP RECORDS OF 109 PLACEMENTS

Handicap	Total cases	Trade and skilled hand-work	Trained office	Semi-professional	Miscellaneous, unskilled	Factory, unskilled
Orthopedic.....	79	25	24	11	10	9
Visual.....	2	1	0	0	1	0
Hearing.....	7	1	1	2	0	3
Cardiac—organic defect.....	21	4	2	3	8	4

In the Chicago school survey, 100 employers were interviewed to discover whether the services of these handicapped children had been satisfactory. Of the 100 employers, 92 stated that handicapped children performed as satisfactorily as those without handicaps. In 93 cases the employers stated that the handicapped took no more than average time off because of illness or for other reasons. The wages the employers paid the handicapped are the usual wages paid to the normal except in a few special cases where the training period or other conditions in the process of rehabilitation made it necessary for the employer to adjust wages in accordance with the production of the employee.

The Placement Bureau for the Handicapped in New York City under the direction of Louise C. Odencrantz placed more than 1,500 handicapped persons during 1929. These persons were placed in approximately 2,200 jobs, indicating that the placements were of fairly stable nature. All of these have been on an economic competitive basis.

Besides those handicapped persons who have been absorbed into commercial and industrial establishments in the United States, a large number have been provided employment in publicly or privately subsidized workshops for special types of the handicapped. Many others have found remunerative employment through systems of home work by which materials and finished products are delivered for the worker. In most instances home work is provided in connection with subsidized workshops.

EFFORTS TO MEET VOCATIONAL NEEDS

The existing facilities for meeting the vocational needs of the handicapped are wholly inadequate. There are, however, several active programs that point the way to an ultimate solution of the problem. These programs may be classified according to their functions as follows:

- Federal-state rehabilitation services
- Employment bureaus for the handicapped
- Sheltered workshops

Physical restoration services
Special education for handicapped children
Residential schools for certain types of handicapped.

The federal and state rehabilitation services established in 42 states represent the only nationally adopted facilities providing a complete service of guidance, training, placement, and follow-up of the handicapped. These services, during the ten years of their existence, have accomplished the vocational adjustment of 45,000 physically handicapped persons of employable age—an average of about 4,500 a year.

Since approximately fifty thousand persons in the United States each year become physically handicapped to the extent of needing vocational readjustment, the rehabilitation services in the states are meeting about 10 per cent of the problem of the physically handicapped of working age.

Bureaus for the placement of the handicapped have been established, usually under the auspices of social agencies, in 10 cities. In some states, notably Ohio, Michigan, and Wisconsin, there is participation by the rehabilitation services. In at least two instances there is participation by the free employment services operated by the state, bureaus for the handicapped being a special provision for these groups.

A number of cities, a few states, and some industrial establishments maintain sheltered workshops for certain types of the handicapped. These shops have three important functions: (1) they provide employment for types of the handicapped that cannot be employed in regular employments on a competitive basis; (2) they provide home work for the homebound and act as sales agencies for their products; (3) in some instances they serve as occupational therapy centers for convalescents who will later be able to enter or return to regular employment.

The sheltered workshops maintained by the states thus far are for the blind only. In some maintained by the cities, an attempt is made to serve other types of handicapped also.

Based upon an estimate that at least one hundred thousand of the physically and the mentally handicapped in the

United States should be employed in a sheltered environment, less than 5 per cent are now so employed.

Thirty-two states make some provision for the physical restoration of handicapped children. While this movement has received considerable impetus during the last five years, the number of children who have actually had adequate physical care compared with the number who need it, is small.

Provisions for the care of the orthopedic cripple have been made available in greater measure than for other types of the physically handicapped for the reason, perhaps, that deformity is more obvious and has a greater popular appeal. However, even for this group, existing provisions in most states are inadequate to meet the needs.

Special education is a school administrative device by means of which children who deviate from the normal to the extent of needing a differentiation of curriculum, procedures, and methods can be given the kind of training they require under more favorable conditions. In general, special classes provide for academic training with a small amount of such handwork as can be provided in the classroom. Gradually, however, other features, making for a complete program of vocational preparation and employment of the handicapped are being added to the curricula.

While provision for special classes has become an accepted practice in a large number of cities, the classes actually established are too few to meet the real needs. Rural communities are almost entirely without special education facilities.

Education codes of several states make provision for setting up special educational programs on a state-wide basis, but thus far the funds and machinery for putting these plans into effect have been made available in only a few instances.

Practically every state in the Union maintains residential schools for the deaf and the blind. There is an increasing recognition by those in charge of these schools of the necessity of the vocational preparation for their pupils. Most of these schools have organized vocational work in addition to the regular academic and prevocational training and are making a de-

cided effort to give vocational training of a kind that will fit the child for social and economic adjustment.

ATTITUDES AFFECTING SOCIAL AND ECONOMIC
ADJUSTMENT

The problem of the adjustment of the handicapped is very largely psychologic—one of attitudes. If the attitudes of parents, the school, the public, employers, and of the handicapped were entirely favorable, the problem would resolve itself into a routine procedure of providing the handicapped child with the skill and knowledge necessary to attain his employment objective and to be remuneratively employed. This, however, is not now the case.

Bronson Crothers, of the Children's Hospital, Boston, in his paper "Mental Hygiene Problems of Children with Sensory-Motor Defects," read before the Mental Hygiene Conference in Washington, May, 1930, pointed out considerations which appear to be fundamental in the creation of a favorable attitude toward the social and economic adjustment of all types of handicapped children:

It is unfortunate, in the first place, that the handicapped child is classified and educated on the basis of his least useful characteristic. It is not only unfortunate but inevitable that such words as *blindness*, *deafness*, *paralysis*, and so on should be used. I see no way of avoiding these names, but I believe it can be demonstrated that a conception can be built up which deals not with the defect, but with the physiological residue that is still intact.

Naturally any attempt to change an attitude of bewildered pessimism to one of effective optimism must be preceded by evidence that a reasonable number of these children are completely intelligent and that rational and successful measures can be worked out for their training.

The next step, however, can be foreseen with some clearness. If doctors and parents and teachers would realize that medical nomenclature must necessarily be dominated by defects, but that educational programs must be based on remaining assets, a new attitude can be fostered. It is conceivable that the whole group of children can be regarded as a series of stimulating challenges to educational methods instead of as a load to be carried with pessimistic fortitude.

In view of the fact that at present the general attitude is unfavorable to successful adjustment of the handicapped, it is deemed advisable to point out those attitudes which must be redirected if the handicapped are to be made social assets.

Parents

In too many instances parents seem to feel that the family is more or less stigmatized by the presence of a physically or mentally handicapped child. At the same time, there is a tendency on their part to be especially solicitous of such a child, and to be inclined to relieve him of responsibility, to pamper him, and to cater to his whims. This misguided attention often leads the child to expect such treatment from others and it is conceded that the attitudes acquired during the formative periods of a child's life are those to which he will cling throughout his life. The position of the parents is most strategic and, therefore, they must be encouraged to take a constructive attitude toward the care and social outlook of their handicapped children.

The School

In some instances there is a tendency on the part of teachers either to overestimate or underestimate the abilities of handicapped children. There are also instances in which the teacher resents the presence of handicapped children in the classroom. As a result the child receives little constructive attention. Again, there are teachers who are oversympathetic and, because of their sympathies, fail in their purpose to render constructive service to these children. It is highly desirable that teachers acquire a knowledge of the social and economic implications of physical or mental handicaps and that they consider the handicapped child as a potential citizen and social asset.

Speaking of the attitude of teachers and others, Henry C. Schumacher, Director of the Child Guidance Clinic, Cleveland, Ohio, makes this interesting observation:

I am of the opinion that the average teacher, in fact the average

school system, is rather bored with the physically and mentally handicapped. In fact, one frequently hears school people state that they could do a better job in the public school system if it were not for this low-grade material. It seems to me that the average school man still has the notion that his chief concern in life is to infuse so much purely academic knowledge with no other aim in view than the acquiring for the moment of such knowledge, and that he rather resents the fact that there are some of us who believe that he has a much wider job than that. The general public has not yet become sufficiently enlightened to appreciate the problem. There is a great group such as those interested in the study of public expenditures who frown down any attempt to work out a program that really meets the needs of these handicapped people. They talk of it as the *frills*. There are many in the upper social strata who believe that this is a problem only of the poor and therefore are not particularly interested in it and do not see that it is having any bearing on their problem. The employer is, as noted above, faced with the fact that the workmen's compensation laws make it rather prohibitive for him to hire the physically handicapped and at present if he were told that certain of his people were feeble-minded he would possibly be quite ready to discharge them because he was without appreciation that they probably, in the job in which they are, are the very best people for that particular job.

The Public

The public heretofore has preferred to give money rather than to render constructive service in dealing with the handicapped. Practically every civic club in the United States has, at one time or another, given moral and financial support to some program in behalf of the handicapped. These organizations are not only willing but anxious to secure physical restoration for crippled children or to provide milk for the malnourished, but a majority of their members are apparently averse to giving a handicapped person a job. This attitude on the part of the public is reflected in the difficulty of securing adequate funds for the promotion of an effective program for the social and economic adjustment of the handicapped. This viewpoint taken by the public has, to a certain extent, encouraged habits of dependency on the part of the handicapped themselves.

While these statements apply generally, there are many instances in which the public has taken a very sane view of the problem. Many individuals have cooperated by referring handicapped cases to the proper agencies, by endorsing and supporting programs of training and by giving employment to the handicapped. These instances of cooperation have been brought about by a constructive effort on the part of some especially interested individual or organization in the community.

As Joseph G. Buch, Chairman, New Jersey Crippled Children's Commission, feelingly states:

Handicapped children restored to health and physical wholeness as completely as possible, educated and trained by the schools and agencies for special work, yet face closed doors when they are ready for employment, and closed doors in time wear down the strongest personalities. What is needed in the first place is a position for the thoroughly trained boy and girl ready for employment; and in the second place a chance for training in those lines of work where this is usually given on the job. Not charity, not philanthropy, but a demonstration is required—a demonstration that these handicapped boys and girls, thoroughly trained and properly guided, are indeed valuable assets instead of liabilities.

Commerce and Industry

In the final analysis, the ultimate solution of the problem of social and economic adjustment for the handicapped lies largely in the hands of commerce and industry, because the majority of employment opportunities for the handicapped will be found in these fields. In order to secure an expression of the attitude and opinion which commerce and industry hold toward the employment of the physically handicapped, a questionnaire was sent to 600 of the largest employers of the country. The analysis of the replies to this questionnaire shows that employers judged according to their attitudes toward the handicapped, fall into three groups:

Those who will not consider the employment of the physically handicapped under any conditions

Those who will not employ physically handicapped persons coming from the outside but who do provide employment for those injured in their service

Those who, as a matter of policy, do not discriminate between the normal and the physically handicapped, placing the worker at a job which his mental and physical ability will permit him to perform.

Employers who do not hire the handicapped in any capacity make up about 50 per cent of those answering the questionnaire. Approximately 25 per cent make no discrimination between the normal and physically handicapped worker.

Of those who do not employ the handicapped the majority give two main reasons for their discrimination: the nature of the work in their establishments is not adaptable to the employment of the handicapped; and unfavorable provisions of the workmen's compensation laws render the employment of the handicapped financially hazardous.

The following quotations from letters received from representative employers illustrate industry's prevailing attitude toward the employment of the handicapped.

Small Steel Products. We naturally do not employ the afflicted when we have sound material at hand. Taken as a whole, even when fitted to the job, they are apt to prove less satisfactory; due to an accompanying mental state of depression or nervousness often to be observed.

Street Railway. I believe that the state compensation laws are largely responsible for employers not employing physically handicapped persons.

Shoes. We have found this type of person in a majority of cases to be very temperamental, and expectant of special consideration. This is particularly noticeable in cases where employment has been secured through charitable or welfare organizations.

Vacuum Cleaners. It has been my experience that there are very few positions that can be filled by physically and mentally handicapped people, and it is a problem that is very difficult to solve. I find that other employees object to being in continuous contact with such people. The environment around such cases is rather depressing. It

is only people with broader minds who forget all about these defects when thrown in close contact with them.

Plumbing Apparatus. In our business due to the hazard on account of machinery and the manufacture of heavy articles together with the fact of state compensation laws, we have adopted the policy of not employing physically handicapped people.

Railroad. We have from time to time employed persons who have been crippled, providing they have been crippled in our service, and our experience with them has not been unfavorable. Where we are able to place them in positions for which they are qualified, and where their crippled condition does not handicap them in properly performing their service, they have, generally speaking, met every requirement, and usually are more devoted to their work than one that is not so handicapped.

Steel. With the present very stringent liability provisions under which a manufacturer must work, we can see no possibility of any extended program in our line of manufacture for the physically handicapped child of working age.

Rubber. There should be no closed doors against the physically handicapped persons of working age. However, we feel that the employer should not be held responsible for accidents that can be charged direct to a physical ailment. To best serve the interest of the handicapped persons, of industry and society, the state should assume the responsibility for injuries resulting from a physical disability to handicapped employees.

Photographic Equipment. I personally believe that many more of these physically handicapped young people could be employed if a definite program of training and follow-up of their physical condition were standardized and made effective throughout the country. They do need extra consideration while on the job. Oftentimes there are more or less continuous therapeutic measures indicated.

Linoleum. Our feeling as an employer toward the physically handicapped being entitled to an even break is: if we have work that such a person can handle as well as one who is physically fit, we would be inclined to favor the handicapped person because from past experience we find that where they do get a job that they can handle they are very conscientious and faithful in attending to their duties.

Dairy Products. As to the policy of the employer toward the employment of the physically handicapped child of working age, I think there should be a certain fixed policy whereby each industry should use their rightful proportion of such employees so long as they

can be employed without being an imposition or a direct handicap to the business.

Mail Order House. This company has always given employment to unfortunates from the standpoint of physical ailments, providing in the judgment of our medical department, it is felt that the prospective employee could handle the work without injury to himself. There are therefore a number of people on our payrolls who are lame or crippled in some manner.

Machinery. When carefully selected, certain defectives can safely be assigned sheltered jobs. It is a mistake to install handicapped children otherwise, unfair to them, to their fellow-employees, and their employer. Providing employment and its acceptance are still voluntary acts; there is nothing paternal nor filial in its essence; and it is erroneous to proceed on the theory that there is. An employer should fill his requirements from the best available supply, and not handicap the business and its able-bodied employees by attempting to invade the fields of established institutions and agencies engaged in educational or salvage work.

Rugs and Carpets. We feel that the policy of the employer toward the employment of the physically handicapped should be to help these unfortunates as far as it is possible, but we are sorry to state that the requirement of the safety laws of the state is gradually forcing us to employ only those who are not handicapped physically or mentally.

Tires and Rubber. There is no doubt in our mind that an employer should be able to work out a policy that should be of assistance to the physically handicapped person, but compensation laws should be so adjusted as to accommodate a policy of this nature. We know that employers generally would be sympathetic towards a policy that would tend to help the unfortunate people who would be handicapped.

There is a growing recognition of the need of offering employment opportunities to the handicapped.

The International Society for Crippled Children reports an instance in which an association of typewriter dealers has worked out a plan by which its members will train and employ crippled boys who have good use of their hands. At the time of the report one dealer has advised that he had three in training and that within a week would have one in each of his six stores.

The Board of Education at Jersey City, New Jersey, passed this resolution at its meeting July 1, 1930: "Resolved that an appeal be made to all employers of labor who employ twenty or more persons that they employ at least one crippled person."

Governmental Agencies

An analysis of replies to a questionnaire concerning the employment of handicapped persons which was directed to civil service commissions located in all sections of the United States reveals that while these agencies usually do not make any special effort to seek out and place the handicapped, they are generally favorable to employing them in positions where the disabilities are of a nature that does not prevent the applicants from properly fulfilling the required duties.

The general attitudes of the various governmental units are expressed by the following typical quotations:

Municipal. "Where such a handicapped applicant applies for entrance to a test we merely consider whether or not his physical handicap will interfere with the performance of the duties of that position. If not, he is admitted without question."

State. "Physically handicapped persons may enter examinations if they are not so physically handicapped as to prevent them from efficiently performing the duties of the position. For instance, for the position of clerk, a person might only have one arm and would be admitted to the examination."

National. "The total number of United States Civil Service positions subject to competitive examinations is approximately four hundred and fifty thousand representing many different classes of employment. The number of handicapped persons appointed is large, especially in such positions as clerks, bookkeepers, stenographers, some mechanical trades, professional, technical and scientific positions, and others where physical ability is subordinate to mental qualifications. In addition to these persons, there are many employees whose disabilities were acquired or developed since appointment;

the general policy of the government is to retain such employees, especially those of long standing, with assignment to duties where the handicap is less disabling for efficient work.

"According to statute, the physical condition of applicants for positions is rated on the basis of 100, and any civilian whose physical condition can be considered as 70 per cent for the performance of the duties specified for the class of positions for which he is applying, is admitted to appropriate examinations. The policy of the United States Civil Service Commission, as far as placing the handicapped is concerned, is somewhat limited by this regulation.

"Of the groups of handicapped persons considered in this report, all except those with active tuberculosis have been admitted to examinations of some kind or other. While persons entirely blind have been admitted to positions of masseurs, their employment has not been a success.

"Special provision has been made for the employment of deaf and hard of hearing people in the several executive departments. The heads of these departments have been asked to supply the Civil Service Commission with a list of the positions in their offices which might be satisfactorily filled by persons with this particular type of handicap."

The United States Civil Service Commission, in reply to a questionnaire, suggests the following points for consideration:

An employee with a physical condition such as deafness or the loss of a limb, but with good general health, is more likely to render efficient service than one with a general or systematic condition, such as inactive tuberculosis, heart disease, or chronic gastrointestinal disorders.

Individuals in either class, recognizing the limitation of their opportunities in outside employment, may devote more energy and attention to acquiring skill and experience in their work than the normal employee. They will also be less likely to resign and deprive the government of the experience gained while employed.

Either class is more likely than the normal employees to lose time in later life by reason of illness or accident, this latter sometimes

involving risk to the government under employee's compensation legislation.

Either class is more likely than the normal employee to become an applicant for disability retirement before reaching the age limit, because of the additional expenditure of energy in overcoming the handicap in office and in daily life; the second class probably more than the first.

There is a loss to the government involved in training an employee through the lower grades only to have him drop out through illness or retirement at a time when his skill or experience has rendered him available for administrative duties.

The Handicapped

The attitude of physically and of mentally handicapped children reflects very largely the attitudes of the home, the school, the public, and the employer.

If he is pampered and catered to in the home and made to feel that his case is deserving of special attention, he is apt to expect the same treatment from the school, the public, and the employer. If, in school, his handicap prevents him from participating in the usual activities, if the tasks assigned him are so difficult that he is unable to accomplish a fair measure of success, he will soon be discouraged, lose interest, and possibly become a disciplinary problem both in and out of school. It may be stated with assurance that unless the handicapped child is given that constructive treatment which will develop in him a spirit of self-reliance, independence, and a desire to work, any program however liberal, will avail little.

The entire scheme of training should emphasize correct attitudes of the handicapped toward their associates and work. In this connection Charles Scott Berry observes:

One important need is to direct the attention of the child away from what he cannot do to what he can do. Specialize on strength, not on weakness. Develop in him a desire to make the most of his possibilities. A second need is to give him an opportunity to participate in social activities while he is in school, similar to those in which he will participate when he leaves school.

The fact should be stressed that if handicapped children are to be placed in industry they must function as nearly normally as possible.

Ruth Thompson in a recent study of placements of handicapped children in the Chicago city schools, concludes that in view of the facts disclosed in her follow-up of 109 cases, the most severely handicapped children whom she studied were not the ones unsatisfactory to their employers, but handicapped children exhibiting undesirable personality traits and attitudes. The cultivation of proper attitudes of the handicapped themselves thus becomes of prime importance.

VOCATIONAL NEEDS AND RECOMMENDATIONS FOR MEETING THEM

In preparing for and placing the physically or mentally handicapped in employment every case must be dealt with individually. Each handicapped child has specific needs that are peculiar to his particular case. Similarly, the various types of the handicapped, the deaf and the hard of hearing, the blind and the partially seeing, the cripple, children suffering from internal conditions, children with problems of mental health and the mentally deficient, have their peculiar needs and each group needs specialized care under the direction of competent specialists.

There are, however, needs that are common to all types and individuals. It is the purpose of this section to set forth the general needs of the group as a whole, to point out the general principles that should obtain in dealing with their problems, and to show how the needs can be met in accordance with these principles.

Discovery and Diagnosis

The highly important need for early discovery and diagnosis of the physically and the mentally handicapped child can be effectively met through:

An extension of the existing local and state, public and private health services providing for adequate exami-

nation services for all children; these examination services to include not only the functions of discovery but diagnosis, and in some instances complete medical treatment

Provision in the public school system for psychologic and psychiatric services for classification purposes and for diagnosis of those discovered to be mentally thwarted, retarded or disturbed.

Curative and Remedial Treatment

The curative and remedial treatment instituted should be rehabilitative with a view to enabling the handicapped child to function, physically and mentally, as normally as possible, should be carried out as closely to the home of the child as practicable, and should be followed through by local or state, public or private health agencies.

While the services of the family physician should be employed in so far as practicable, this should be done in consultation with competent medical and surgical specialists. The resources of the existing public and private medical and social work organizations should be utilized to the fullest extent.

Physical and mental remedial and curative work should be closely coordinated. In certain cases, psychologic and psychiatric treatment is no less important than medical treatment. Throughout the period of social and economic adjustment it is necessary to adapt tasks and methods to the mental as well as to the physical abilities of the handicapped. It is the function of psychologic and psychiatric clinical services to define the mental limits of each handicapped child; to recommend the scope, kind, and degree of education from which the child will be able to profit; to suggest the type of employment for which to prepare him; to recommend and follow up such mental therapeutic treatment as the individual child may require.

Social Contacts

The variety and kind of social contacts made by the handicapped child with both normal and other handicapped

persons, will establish and condition his attitudes toward his handicap, his fellow-men, and life in general. A carefully thought-out plan should be made by which physically and mentally handicapped children may have social contacts with both normal and other handicapped children. The objectives of such a plan would be:

- To orient the child in the environment in which he finds himself
- To teach him to get along with others
- To furnish him with an opportunity to express himself
- To develop desirable personality traits
- To forestall feelings of isolation and inferiority.

Properly organized social contacts will play an important rôle in instilling self-confidence, good morale, and a spirit of independence.

There is a division of opinion as to whether, as a matter of policy, handicapped children should be educated with normal children. However, when the value of social contacts with normal children is considered, education of the handicapped in close proximity with the normal seems the desirable procedure, provided, of course, due consideration is also given to the interests of the normal children. It is recognized that the special physical, educational, and vocational needs of certain types of the handicapped, the blind, the deaf, the severely crippled, and the tuberculous, can best be met by training in special schools or special classes. Where, for practical reasons or for safeguarding the interests of the normal children, handicapped children are separately trained, the need for provision for social contacts outside their respective groups must be met.

The means of providing social contacts will depend upon the conditions in the local communities. Where the usual social and recreational organizations for the normal group can be adapted to the needs of the handicapped, they should be utilized. Where these organizations cannot be adapted, special organizations based on the types of handicap will probably be advisable.

Education

In the education of physically or mentally handicapped children there should be a differentiation of educational methods and procedures to provide the special kind of education their special needs require.

In view of the relatively longer period of preparation for life's work necessary in the case of handicapped children and because of the somewhat restricted range of employment opportunity open to them, a restatement of the aim of education in relation to the physically and the mentally handicapped may seem advisable. In any such restatement emphasis should be given to the need for vocational training including preparation for professional, commercial and industrial pursuits depending upon the degree and nature of the handicap. It goes without saying that the general education of the handicapped should be, as for normal children, as broad and as thorough as is consistent with the abilities of the child.

To meet completely the educational needs of the handicapped would require an adaptation of the curriculum, the subject matter, and methods of instruction, as well as an adjustment of the school facilities and of the administrative organization. Effective teaching of handicapped children requires the services of especially trained teachers; home teachers for those who are not able to attend classes; provision for rest periods, for special equipment for transportation to and from school, and for concomitant physical and mental therapeutic treatments.

Educational and Vocational Guidance

The function of educational and vocational guidance is to discover the handicapped child's general abilities and aptitudes, to interpret their vocational significance, and to secure for him that type of general education and vocational training through which his vocational objectives may be achieved.

In the selection of occupations for physically or mentally handicapped children attempts should be made to select those

in which competition with the unhandicapped will be reduced to a minimum.

Educational and vocational guidance requires individual case procedures and involves a careful appraisal of the child's specific capacities as well as of his limitations. In this appraisal, medical, psychiatric, and psychologic recommendations should be considered.

This guidance should extend, in many cases, throughout the entire process of social and economic adjustment, and each step should be a phase of a continuous program.

The guidance of physically and mentally handicapped children is a complex procedure. It requires a wide range of knowledge on the part of the counselor who must have had special training. The responsible agencies should have on their staff an adequate number of placement officers with training and experience to meet the needs of the specific group to which each is assigned. It is desirable that schools and colleges offer training courses for workers with the handicapped.

Prevocational Exploration of Abilities and Interests

Prevocational training, in the sense of simple manual and industrial activities, related to the other types of education provided, is designed primarily to discover the handicapped child's chief interests and potentialities.

Prevocational training will serve as a guide to vocational training, for it furnishes try out and exploratory opportunities which may give the instructor or the child himself ideas concerning his aptitudes and abilities.

These sample exercises for the exploration of interests and abilities will have therapeutic value in so far as they strengthen the individual's morale and build up his desire for and satisfaction in useful accomplishments in actual work. Within the limits of possible exercises as specified by medical advisers, the vocational counselors should endeavor to offer to the individual a wide opportunity to try exercises in the fields of agriculture, commerce, and industry, and to study

occupational information related to these callings and to professional opportunities as well.

Prevocational education also has cultural values, helps broaden the child's outlook, and should spur him on to achievement.

Vocational Training

The term *vocational training* is here interpreted to mean training for occupations in commerce and in industry, as well as for professional pursuits. It should be directed toward a definite employment objective and should be related closely to local industrial, commercial, and professional employment opportunities.

Whether the vocational education of the individual runs concurrent with general education or succeeds it, the two should be carefully integrated with effective counseling before the change of emphasis is made. Vocational education should at all times be broad enough to teach the technical knowledge and wisdom involved in vocational success, and counselors and teachers should make sure that desirable elements of character and citizenship are not neglected.

The types of vocational training in general use are:

Formal instruction, public schools, trade schools, business colleges and universities

Part-time employment and part-time formal instruction

Employment training, or an arrangement by which the child is trained on the job under production conditions.

Though many can be trained, either full or part time, in the existing schools, a very large number of the handicapped will have to be trained on the jobs they are to fill in commerce and industry just as the other workers that enter employment as novices are trained. It would be a physical and a financial impossibility for the school system to provide the thousands of different kinds of specialized machines and processes necessary if all training were to be done in the school.

There should be sufficient flexibility in the vocational training program to enable the schools to utilize supervised employment for training purposes in lieu of full-time attendance at school wherever this appears to be the best course for a given individual.

Federal state rehabilitation services have demonstrated the feasibility of training physically handicapped persons on the job, and industry has shown its willingness to cooperate in such programs. In many instances these services have subsidized the employee during the training period by payment of a tuition fee, since it was unjust to expect the employer to remunerate the worker in training, in addition to bearing the cost incident to training the handicapped person. If industry is to be expected to train handicapped children in appreciable numbers, funds should be made available to reimburse the employer for the cost of training. This expense must be considered a necessary part of the general cost of educating and adjusting the handicapped.

For those handicapped persons who can be vocationally trained in the public day schools, the related educational subject matter will naturally be given there, concurrently with the training in technical skills. For those who are being trained on the job in industry, provision should be made to have the related educational matter taught in part-time schools.

During the period of vocational training, whether in school or in industry, the handicapped child requires continuous guidance and supervision.

Placement in Employment

A special service of placement in employment must be provided for the handicapped child. This service must be the focal point for all other services rendered the individual handicapped child and is the supreme test of any program for promoting the social and economic adjustment of the handicapped. Without an effective placement in employment service other services are more or less futile.

The outstanding factors in the service of placement of handicapped children in employment are:

A complete knowledge of the child's physical, mental, temperamental and vocational qualifications

An intimate knowledge of the employment opportunities of the community through which the services of trained handicapped persons may be utilized

The ability on the part of the placement officer to win the employer's cooperation in offering employment opportunities to the trained handicapped child.

In order to provide a knowledge of employment opportunities in the community and to secure the cooperation of employers, surveys of commercial and industrial establishments should be made. The jobs in these establishments should be analyzed to discover the physical, mental, and temperamental qualities and abilities required to perform them.

Follow-up

The final step in the social and economic adjustment of the handicapped is proper follow-up work. The period immediately following placement is one of adjustment to the environment of employment. Minor adjustments of habits and attitudes often are required to help maintain the handicapped person's morale. The handicapped child needs the assistance of persons who understand these problems of adjustment. Follow-up should be an extension of the guidance and placement service and should continue until the child is reasonably adjusted to his employment and environment.

NEEDS OF VARIOUS TYPES

Since the vocational needs common to all types of handicapped children have been outlined, only the specific vocational needs of the various groups of handicapped are briefly indicated here.

The Deaf and the Hard of Hearing

Among the 10,000,000 people in the United States whose hearing is impaired to such an extent as to constitute a serious handicap socially, educationally and economically, there are more than a million, perhaps two million, children.

The first need of the deaf and hard of hearing is the early discovery and diagnosis of the handicap. This may be achieved through the measurement of hearing of every child in the United States by use of scientific apparatus.

On the basis of these auditory tests, children with defective hearing may be properly classified according to the degree of impairment. Appropriate treatment of the various groupings may then be instituted to correct defects as far as possible, and, in the case of the hard of hearing, to preserve residual hearing to the maximum degree. Discovery and treatment of general health problems of school children and periodic retests of hearing are also recommended.

In order to develop in the deaf and hard of hearing child those instincts of sociability which will enable him to participate fully in industrial life, social contact with the normal child is necessary.

The first educational need of the deaf is the acquisition of language which may be acquired through lip reading and through the development of a vocabulary which will facilitate the reception and expression of ideas through oral and written words. After the deaf or hard of hearing child has acquired this ability, he should be provided with a wide range of prevocational and vocational training opportunities.

In the great majority of cases, the hard of hearing child can receive his education successfully in the public or private schools, provided that certain special attentions are given him by his teachers, and that special instruction in lip reading and in speech is given as soon as the defect is discovered.

Nursery schools designed to meet the problem of the preschool child, who is more or less cut off from ordinary methods of language acquisition, enable him to enter the school system less retarded.

Curative treatment, social adjustment, and specialized education of the deaf or hard of hearing child will have largely prepared him for the final step of the vocational adjustment program, which will be completed through employment placement and follow-up. Care must be exercised that the child is not subjected to undue strain, the possibility of personal injury, or the danger of having his handicap further aggravated. Jobs requiring the minimum use of communication and hearing will be found most suitable for this type of the handicapped.

Defective in Speech

Speech defect may be due either to a physical defect of the speech organs or to a lack of coordination of the mental functions involved in speech. Diagnosis immediately upon discovery is important in order to determine the origin of the defect and to know the kind of treatment needed to overcome or alleviate it.

Defective speech is a serious vocational handicap in any of the occupations that require meeting the public. Guidance and vocational training should, therefore, be directed toward those occupations that do not require the child to meet the public to a great degree.

Speech defects, whether of physical or of mental origin, are usually amenable to proper therapeutic treatment. Those of mental origin, however, require follow-up of speech training to insure against possible recurrence of the defect.

Visually Handicapped

It is estimated that the visually handicapped group of children in this country today comprises 15,000 blind children and 50,000 partially seeing children.

Early discovery of the blind and diagnosis of the extent of the defects among the partially seeing are important. Remedial defects should be corrected through therapeutic treatment or fitting of glasses. Periodic examination should be made to insure preservation of residual vision. Parents

of children having defective sight should be instructed in the proper care of the child's eyes, as to treatment, study and work.

Since to ward off failings of isolation and discouragement, association with the normal is necessary, and since the nature of their handicaps prevents them from fully participating in the usual activities of normal children, blind and partially seeing children are in special need of social contacts. Such association will develop in these children self-reliance, courage and determination, as well as an understanding of how to get along with normal persons.

The education of the blind should follow closely the education of normal children, with subjects taught by means of the remaining senses. Educational guidance should determine whether the child should be encouraged to continue academic training into the higher levels or to concentrate on the vocational subjects.

If, after refraction or treatment, partially seeing children are suffering from progressive eye difficulties or have too low vision to make use of the regular school equipment, they should be placed in sight saving classes where the equipment will be adapted to their need, such classes to be conducted by teachers trained to understand the difficulties of the various vision handicaps and able to adjust the curriculum by special educational methods.

Vocational guidance of the blind must capitalize those abilities and aptitudes of the blind person that offer the greatest promise of success in productive work. The trend of vocational guidance should lead away from the traditional occupations of the blind that have become obsolete—chair caning, rug weaving, music, and basket making. Worthwhile guidance should consider local employment opportunities for the blind, and administrators should be prompt in adjusting curricula to changing business and economic conditions.

The vocational guidance of partially seeing children should begin as soon as they enter sight saving classes, with a view to having them select occupations that will not further injure their sight. Vocational training that can be safely

undertaken by partially seeing pupils should be made available in junior and senior high schools.

Placement of the blind requires the services of highly-trained officers. The matter of placement of the partially sighted is complicated by the fact that economic conditions often force them to enter occupations that they may be able to see well enough to undertake, but that will react unfavorably upon their sight. Hence, regular school employment bureaus, and, where they exist, employment bureaus for the handicapped, should make a study of occupations suitable and available for these pupils and should make every effort to place them satisfactorily. Follow-up work is essential to insure against further depreciation of sight.

The Crippled

Early discovery and diagnosis followed by therapeutic treatment to correct or alleviate as far as possible the disabling condition is the primary need of the 365,000 crippled children in the United States. Adequate appliances and braces should be obtained at reasonable costs. There should be periodic follow-up of physical conditions and results of treatment to insure preservation and development of residual functioning of bones, joints, and muscles to a maximum degree.

The social adjustment of the crippled child could be successfully accomplished by coordinating all interested agencies and by using all suitable facilities.

The education of crippled children requires differentiation in the direction of special classes or schools for the severely crippled, transportation for those unable to attend otherwise, special seating arrangements to accommodate the individual child, home teachers for those unable to attend school, educational opportunities in hospitals and convalescent homes, and facilities for higher education. The curriculum for the crippled child will be practically that of the normal child. The final aim, that of vocational adjustment, however, should be kept in mind.

Vocational guidance and training should be given in the schools and should be directed towards employment in which the child will be able to perform as well as the normal child. To insure this requires a thorough analysis of the job for which it is proposed to train the individual child. Placement in employment of the cripple is not so serious a problem if he is adequately trained for a specific job and provisions are made enabling him to get to and from his work.

The home bound cripple who must have his materials delivered to him and his product disposed of is the most serious problem. However, with a properly organized and supported system of sheltered workshops, the needs of this group can be met effectively.

Internal Conditions: Tuberculosis, Heart Disease, Intestinal Parasites

As with all other groups of the handicapped, the first need of children suffering from internal conditions is for early discovery and diagnosis. Curative and remedial treatment must be instituted as soon as the condition is diagnosed and must continue as long as need for it is indicated.

The development of normal social contacts for children with internal conditions is important in order to overcome their sick consciousness and sense of inferiority. The proper social adjustment may best be secured by providing compensatory forms of recreation.

Education for children with internal conditions must be carried on with special reference to their individual physical conditions. Provisions for frequent rest periods, open-air classes, hot lunches, and so forth should be made by the schools.

The physical condition of the individual handicapped child is the determining factor in his vocational adjustment. His prevocational training should require a minimum of physical exertion but should be of sufficient variety to bring out his aptitudes and abilities.

Hygienic working conditions should be an important con-

sideration in vocational training and employment placement. Arrangements should be made for medical follow-up for a period sufficient to insure that the nature of the work he is engaged in is suited to the physical ability of the child.

The Mentally Maladjusted

Problems involved in the vocational adjustment of the mentally maladjusted are more indefinite than those of the physically handicapped and consequently more difficult to solve. A considerable number of children with no definite intellectual deviation or physical abnormality are unable to adapt themselves to their environment because of some behavior or personality disturbance associated with emotional instability, psychopathic conditions, truancy, incorrigibility, laziness, and indifference. Those children demand special care and attention if they are not to develop into social and economic failures.

Reliable studies indicate that not less than 5 per cent of our school children are urgently in need of psychiatric consideration. Diagnosis of the specific individual difficulty is the first need of this group. Clinical facilities for diagnosis including child guidance clinics, habit clinics for preschool children and mental clinics for parents should be made available to courts, social agencies and school systems. Proper diagnosis will indicate treatment necessary for the promotion of mental health.

Complete social adjustment is one of the greatest forces in the promotion of mental health. As adjustment of the child cannot be separated from a total situation involving home, family, school, and so forth, mental hygiene education for adults controlling the environment of the child is an indispensable part of any practical program.

The educational needs of these emotionally disturbed children can generally be met in the regular grades under psychiatric supervision and treatment. Provision must be made for some in special adjustment classes or in a residential school. A very few must be withdrawn from school and

placed under some other form of treatment. The most important factor is that the child be considered individually and appropriate treatment instituted after the nature of the specific mental disability concerned has been made clear by competent clinical diagnosis.

Skillful adjustment of these children to their environment by the correction of behavior and personality defects eliminates the need of specialized vocational treatment. In as much as their vocational possibilities are not affected by physical limitations and their mental problems are solved by individualized consideration during their school years, the employment placement of this group does not differ from that of normal children.

The Mentally Deficient

The mentally deficient group is held to include those children who are feeble-minded and those intellectually subnormal children who are retarded to a lesser degree than the former group.

A conservative estimate places the number of the feeble-minded at 1 per cent of the general population; the intellectually subnormal at an additional 14 per cent of the unselected adult population.

The primary need of both groups is early discovery and diagnosis in order that an appropriate program of training may be instituted. These children may be identified through clinics operated by schools, social agencies and state departments.

The data secured through discovery and diagnosis would indicate the extent and type of provisions necessary as well as the care essential in individual cases.

Social adjustment is a particular need of the mentally deficient, as most of these children come from homes where the desirability of social intercourse is unappreciated. Welfare workers, teachers and counselors who understand the needs of the children should study unfavorable home conditions and attempt to ameliorate them.

The education of the feeble-minded child should include as much academic training as the child is able to assimilate, but the curriculum should be eminently practical and the emphasis should be on manual and industrial training. The educational needs of the feeble-minded group should be met by the public schools through special classes and other pedagogical provisions designed to develop the children into economic and social assets.

These children have a special need for periodic re-examination to determine mental development and academic achievement with a view to their proper classification, educationally and vocationally. Such reexamination would indicate the point at which academic education should be discontinued in favor of definite vocational preparation.

The education of the intellectually subnormal should be a responsibility of the public schools as these children are capable of a fair degree of initiative and resourcefulness, and possess qualities which make for independent social adjustment. It is important that their education be directed toward the development of a social type of personality and the formation of character. The education of these children also requires a greater emphasis on manual instruction and industrial training than they now receive. Intellectually subnormal children should not be placed in the same special classes as feeble-minded children because of their generally higher level of mental functioning and their greater capacity for achievement.

Additional opportunities for vocational training should be offered by the schools for the benefit of those mentally deficient children who have reached the limit of their academic ability. Part-time placement in industry under supervision of the schools offers a possible solution of the problem.

The vocational guidance of feeble-minded and intellectually subnormal children should proceed through try-outs at a variety of types of work either in the school or through part-time employment. The vocational training should consist of the development of a good physical body by the correction of all possible defects, the formation of good habit pat-

terns, stabilization, development of elementary manual skills, and specific training in the lower levels of trade, commercial and industrial occupation.

There is a special need for local surveys of employment that will meet the requirements of the feeble-minded and the intellectually subnormal. Although some of them are capable of holding positions of responsibility, their work will usually be of a repetitive nature requiring little planning or mental alertness. Perhaps the outstanding vocational need of the subnormal is a gradual transition from the training he receives in the school to the job he is to fill in employment. This latter need might be met by employment on a part-time basis leading up to full-time work.

A PROPOSED VOCATIONAL PROGRAM

In order to make it possible to meet the needs incident to the social and economic adjustment of handicapped children, a comprehensive program must be developed. Such a program requires a high degree of cooperative effort on the part of the medical profession, health and social work agencies, educational authorities, and industry in general. The following principles form the basis of an effective program for handicapped children:

Responsibility for the social and economic adjustment of handicapped children should be placed upon the local community

The program should be state-wide in its application and the state's participation should be assured to provide leadership, effect coordination of efforts and point the way toward financing the local programs

Existing facilities should be used to the fullest extent and new ones created only when a definite need has been demonstrated

The interests of the child, the employer, and of society in general should be safeguarded

Research in the problems involved in the successful social

and economic adjustment of the handicapped should be encouraged

A Federal agency for the promotion of the program on a nation-wide scale should be designated.

The functions outlined below may be considered among the most important ones in an adequate program.

A Central State Coordinating Agency

The social and economic adjustment of handicapped children is a peculiar local responsibility. The local community should provide adequate facilities for medical care, and for social, academic, and vocational education, and offer suitable employment opportunities.

There are, however, many communities in the United States today in which some or most of these facilities are not available.

In order that the efforts of all those who are working in behalf of the handicapped child may be as effective and far reaching as possible, that facilities may be provided where they are lacking, that conditions may be equalized and adjusted between different communities, there should be available a central state coordinating agency charged with the responsibility of promoting services for the handicapped on a state-wide basis.

Since the nature of the work of adjustment of physically and of mentally handicapped children requires the technical services of the health, education and labor departments, and especially the general social services of well organized departments of welfare, it is suggested that the state welfare department be designated as the central state coordinating agency, to exercise general supervision over the work for the handicapped, by setting up an administrative council which will effectively unite the services for the handicapped carried on by other state departments, particularly health, education and labor, and which will integrate into a unified state program the efforts of local health and social work agencies and of voluntary organizations interested in the handicapped.

Because of the fact that varying standards obtain in the welfare departments of different states, and some are not in a position to furnish the necessary services, it may be advisable that some other state department such as the education or labor department be chosen as the coordinating agency.

An important place in the central state coordinating agency will be occupied by the state rehabilitation services already existing in 42 states, which for the last ten years have shown progress in developing sound procedures in the vocational adjustment of the physically handicapped of employable age.

Creation of Constructive Attitudes

It is vital to develop a program of education which reaffirms the principle that handicapped children are not peculiarly set apart from other children and that their needs are the common needs of all children, although because of some physical or mental handicap they require a more intensive application of medical care and of social, academic, or vocational education.

The following definite objectives must be included in the program for the development of constructive attitudes:

Parents must be encouraged to assume the same attitude toward their handicapped child as toward their normal child

The school authorities must be made to appreciate the fact that the handicapped child is a potential social asset and that his development must proceed to the maximum of his capacity. Educators must also realize that, although differentiated training methods and procedures are required to meet the physical or mental limitations of the handicapped, the goal of education, the social and economic competency of the child, is essentially the same

The public must come to appreciate the fact that the handicapped child not only has the same inalienable right to an opportunity to develop to the maximum

of his capacity but that it is the particular duty of society to provide the child with that opportunity. The social and economic contribution which this large group of handicapped children has to make must be pointed out

It must be demonstrated to employers that handicapped persons who have been adequately prepared may become competent, dependable, and loyal employees.

There must be general realization that the task of social and economic adjustment of handicapped children does not rest upon any one group in society but upon the cooperation of all groups. There must be general acceptance of the fact that these children are potential social assets, that many of them, with proper care, education and training, may be made self-sustaining, and that some of them may make lasting contributions to the progress of civilization.

The program for the creation of constructive attitudes could be furthered through the coordination of the efforts of a number of national and state organizations now fostering the interests of various types of the handicapped, for example, societies for crippled children, tuberculosis associations, mental hygiene societies, associations for the blind, for the deaf and hard of hearing, and for the cardiacs. Appreciative and constructive attitudes toward the vocational possibilities of the handicapped can be developed through an enlargement of the memberships of these organizations to include all groups interested in the work for handicapped children, through publicity in newspapers, magazines and periodicals, and through personal presentation of the problem before associations and groups which will help promote public opinion.

Development of Employment Opportunities

The employment of the physically and of the mentally handicapped child of working age would seem to proceed on three levels: (1) those who are able to work in regular in-

dustrial, commercial or professional pursuits beside the normal worker and on an economic competitive basis; (2) those who are able to work only in a sheltered environment, for example, a subsidized workshop; (3) those who are unable to travel to and from work and therefore must work in their homes, with materials and finished products delivered for them.

In developing these employment opportunities, industry becomes the focal point for the first level of employability. The program of providing fair opportunities of useful and profitable employment for the physically or mentally handicapped child of working age is based on the philosophy that any handicapped person who can, despite his handicap, perform a particular job as well as a normal person, has a right to employment, and furthermore, if he can compete with the able-bodied, he will secure and hold it.

Industry is usually open minded and willing to be convinced of the feasibility of employing the handicapped. If it can be demonstrated to industry that a physically or mentally handicapped young person who has been adequately prepared can perform as well as the normal worker, industry will not be slow in providing employment opportunities.

Failure to secure the employer's cooperation is often due to the fact that the employment possibilities of the handicapped in industry are not adequately demonstrated. A more extensive use of job analyses and surveys of employment opportunities are suggested to prove the vocational possibilities of the handicapped and to create on the part of the employer an attitude which will secure his complete cooperation in the scientific placement of the handicapped.

There are also many tasks in city, state and federal establishments that could be effectively performed by the physically and the mentally handicapped. A comprehensive survey of these positions should be made with a view of filling these positions as far as is practicable with the physically and the mentally handicapped.

For those handicapped who are considered on the second level of employability, sheltered workshop facilities sub-

sidized by public funds, perhaps, should be provided which will fill a threefold need:

Provide employment for all handicapped persons who are unable to engage in regular employments and are not in need of institutional care

Serve as a curative workshop for persons who are convalescing from injury or disease, giving them employment during this period and rendering them fit to return to their regular employment when complete recovery has been effected

Serve as a central marketing agency for the products of home bound handicapped persons who are able to produce in the home but unable to market their products.

A number of sheltered workshops, especially for the blind, are in operation in this country. These shops are usually provided with equipment and materials for the manufacture of articles of merchandise to be sold in the open market. Their organization provides for operation under a director who has the responsibility for both the manufacture and the sale of the products of the workers. The income of these shops is usually sufficient to pay a fair wage to the employees but in no case are they self-supporting. Hence the necessity of a subsidy to aid in meeting the cost of operation.

In some instances it would be possible to establish sheltered workshops in connection with industrial plants. In fact a few such shops are now in operation, through the initiative of institutions, for special types of the handicapped. An extension of this idea would provide employment for a large number of those types of the handicapped who cannot work in regular industrial employments.

For the home bound handicapped, the organization of the sheltered workshops should provide for such local consignments of work as are available in the community, with the additional provision for consignments from the workshop, these consignments to be completed, returned, and marketed through the sales department of the workshop.

The number of persons who could be profitably employed in or under the supervision of sheltered workshops is not known. However, it is probable that one-third of the physically and of the mentally handicapped could and should be so employed.

Protective Legislation

Existing laws in a number of states will have to be amended and extended in order to make a comprehensive program for the handicapped fully effective. At present certain laws mitigate against the employment of the handicapped or do not completely protect the interests of the employer or the handicapped person. It is suggested that consideration be given the following:

Workmen's Compensation Laws. These laws, in effect in 44 states, Alaska, and the District of Columbia, covering employees of the Federal Government, make difficult the employment of the physically handicapped because of the fear that such workers are more liable to injury in employment than those without physical defects. These laws have projected the insurance caution into places of employment, encouraged physical examinations, and the upgrading of personnel. They create an additional handicap which the physically handicapped must face when they seek employment. There are no actuarial data which show that physically handicapped workers are a greater risk than normal workers, but employers, particularly the larger ones, think the risk is greater. Thus a condition has been created in industry which must be met by certain modifications in the workmen's compensation laws which will safeguard both the employer and the handicapped worker in case of accident if the physically handicapped in large numbers are to be employed upon the same terms as workers without physical handicaps.

Twelve states have attempted to meet this problem by providing that if a worker who has sustained a permanent partial disability, such as the loss of one hand or arm, one foot or leg, or one eye, suffers the loss of another of these members, making him totally disabled permanently, the

employer shall pay only for the actual loss which occurred in his employment, and the element of permanent total disability after the scheduled loss has been paid by the employer shall be paid by the state from a special fund provided for the purpose. This has removed part of the employment handicap, but even in these states employers are reluctant to accept handicapped workers because of the supposed extra insurance risk.

Serious consideration should be given therefore to the introduction of state insurance for the physically handicapped to assure their employment, and to make equitable the employer's financial responsibility.

Reporting. In a few states there are legal provisions requiring physicians and midwives to report all congenital deformities to a central state agency. While this is only one phase of a complete and continuous reporting service covering the handicapped it should be included in the legal provisions for such reporting services in every state.

Compulsory School Attendance Laws. It may be advisable to modify compulsory school attendance laws to provide for the compulsory education or training of the physically and of the mentally handicapped. Under present laws such children are often excused from school attendance with the result that many of them never have the advantage of any training that will enable them to become socially and economically competent. In order to offer educational opportunities to those who cannot attend school, the services of visiting teachers will have to be made available to give educational and vocational training in the home. However, in many instances provision for transportation will enable the handicapped child to attend the regular or special school.

Other Legislation. Such other legislation as will safeguard the interests of both the handicapped and the employer, including special regulations relative to the employment of children and young persons in hazardous occupations, general measures relating to safety, sanitation, and so forth and compensation laws as they apply to minors, should be promoted.

Promotion by Private Agencies and Industry

Research and constructive experimentation by private agencies and by industry are very much needed in the development of programs for the vocational adjustment of the physically and of the mentally handicapped. Comprehensive studies should be made of the possibilities for a proper utilization of the productive capacities of the various types of the handicapped, of the refinement of physical and mental measurements for determining their abilities and aptitudes, of the successive steps and specialized procedures essential in effecting their vocational adjustment, of the best methods for the integration of national, state, and local educational, vocational, industrial, health, and welfare activities in an effective plan of vocational adjustment.

Promotion by the National Government

To solve the problem of handicapped children requires national leadership and research on a national basis. In order to provide this leadership and research, there should be designated a Federal Governmental agency charged with the responsibility of promoting a complete program of social and economic adjustment of all types of handicapped children.

The function of the national agency would be threefold: (1) to stimulate the organization of state programs for the social and economic adjustment of all handicapped children; (2) to integrate the efforts of national and state associations and organizations and individuals interested in the promotion of programs which will aid in the social and economic adjustment of handicapped children; (3) to conduct general research in the problem of the handicapped, to evaluate methods and procedures used in the educational, vocational and social adjustment of all types of handicapped children, and to act as a clearing house for information on a national scale.

The Federal Government should undertake some measures to coordinate the possible services of the United States

Children's Bureau with those of the Office of Education in the Department of the Interior, and the Division of Vocational Rehabilitation in the Federal Board for Vocational Education. The latter, for the last ten years, has been engaged in the promotion of the vocational rehabilitation of the physically handicapped of employable age in the states and seems to be in a position to extend its services to include the physically and the mentally handicapped children.

SUMMARY

Children who are physically or mentally handicapped constitute a large social, as well as an economic, problem.

Such children possess aptitudes and abilities which, if developed through a constructive program, will enable them to carry wholly or in part their own social and economic weight.

It has been amply demonstrated that through proper training handicapped children can overcome their handicaps and that it is feasible to prepare them for, and place them, in useful and gainful employment.

The physical and mental handicap under which certain children labor is apt to set them apart. This should not be, for their needs are the common needs of all children. They should be assisted by those things which will supplement their handicap in order that they need not be unnecessarily debarred.

Meeting these needs, which include medical treatment and social, educational, and vocational adjustment, requires a high degree of cooperative effort on the part of the medical profession, social and health workers, educational authorities, and employers whose services should be coordinated and directed so as to provide:

Early discovery and diagnosis

Curative and remedial treatment

Social contacts

A differentiation of education with vocation as an important aim

- A service of educational and vocational guidance
- Prevocational exploration of abilities and interests
- Vocational training
- Placement in employment
- Follow-up in employment

The program for meeting the needs of the physically and of the mentally handicapped children should include :

- Promotion by a central state coordinating agency
- Creation of constructive attitudes
- Development of employment opportunities
- Promotion of protective legislation
- Promotion by private agencies and industry
- General promotion by the national government

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